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BELOIT IRON WORKS BELOIT WIS

View of No. 1 and No. 2 Beloit Removable Fourdriniers at Thunder Bay

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Electro Bleaching Gas Co.

PIONEER MANUFACTURERS of LIQUID CHLORINE

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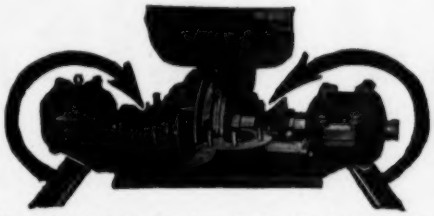

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Photograph of a Centrifugal Pump Shaft badly worn by working against flax packing which did not carry sufficient lubricant to prevent friction.

CUTNO PACKING

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Its lubricant can be relied upon to resist the cutting action of these chemicals, and to keep the pump shaft so perfectly lubricated as to avoid friction. To prove our claims let us send you a free working sample to test under your own conditions.

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SEVENTH YEAR

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TABLE OF CONTENTS

Copyright, 1928, by Lockwood Trade Journal Co., Inc.

Tariff Committee Invites Cooperation 27
Start Work on Paper Mill at Lynchburg 27
Important changes in Paper Mill Ownership 28
Nekoosa-Edwards Expansion Program 28
Rogers Paper Mfg. Co. Makes Repairs 29
Reforestation at Bogalusa 29
Swedish News Print Mills Report Full Orders .. 29
Acid From Mill Alleged to Injure Fish 29
Demand for Paper Livlier in Philadelphia 30
Crown Willamette Planting Trees 31
Paper Market Fairly Steady in Chicago 32
E. A. Hall, Jr. to Join Crown-Zellerbach 32
Chicago Paper Trade Association to Discuss Costs 32
Canadian Pulp and Paper Association Plans 33
Pulp Makers Oppose Duty on Stone 33
Interlake Tissue to Build Extension 33
Construction News 34
Thomas R. Cree Made Manager 35
New Pulp and News Print Organization 35
Obituary 36
Boston Paper Market Quiet 38
Trade Marks Department 40
New York Trade Jottings 44
Power Plant Section **46**
Paper Imports and Exports 54
Editorial **58**
Canadian Paper Exports Decrease 59

Technical Section

Measurements of White Water Flow with V-Notch Wiers and White Water Analysis.. 61
Current Paper Trade Literature 63
Bleaching Sulphite Pulp 65
Paper Board Deckles 72
Wants to Use Waste Products Paper 72

Cost Section

Imports of Paper and Paper Stock 78
New York Market Review **82**
Miscellaneous Markets **84**
Market Quotations **86**
Paper Mill Stocks and Bonds **88**

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements 91, 92, 93, 94

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REG. U. S. PAT. OFF.

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KENWOOD BOTTOM BOARD FELTS

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Kenwood Mills, Albany, N. Y.

Kenwood Mills Ltd., Arnprior, Ontario

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXVIII, No. 1 Thursday, January 3, 1929

Tariff Committee Invites Cooperation

General Tariff Committee of the American Paper and Pulp Association Plans to Present the Industry's United Front at Tariff Hearings Before the House Ways and Means Committee on February 13-14—Discussion Is Requested With Groups Who May Not Be Sympathetic With Committee's Position

D. C. Everest, president of the American Paper and Pulp Association, has just informed the association's affiliated and allied organizations of decisions of far-reaching importance, as discussed at the preliminary tariff conference held in New York City on December 18. In sending copy of report of that conference to those who will be largely responsible for the tariff activities in the various branches of the industry, President Everest said:

President Everest's Statement

"May I call your attention especially to the decisions recorded in this report, which have been officially approved by the Tariff Committee of the Association and which will therefore govern our activities in efforts to present the industry's united front and thus secure adequate protection in the pending tariff revision?

"The Tariff Committee would be especially pleased to discuss the potentialities of these decisions with any groups in the industry or with mill executives who may not be in sympathy with its position in these important matters.

"In order that the briefs from the various branches of the industry may be effectively compiled into a single printed brief, to be presented through the Association's General Tariff Committee at hearings before the Ways and Means Committee of the House on February 13 and 14, 1929, it will be necessary to have whatever brief your branch of the industry may be preparing filed with O. M. Porter, secretary of the Association's General Tariff Committee, by the fifteenth of January next."

Decisions of the Conference

The decisions of the conference to which President Everest referred and which will have such an important bearing on the industry's tariff revision activities are:

1. No effort will be made by the Association's Tariff Committee to secure a duty on pulp or news print.

2. The Association's Tariff Committee will retain Wise, Whitney and Parker to supervise the paper industry's tariff revision activities.

3. The information collected during the past four years by the Import Committee, which will cooperate with the Association's General Tariff Committee, will be made available in the preparation of the industry's brief which will be presented to the House and Senate Committees by the Association's General Tariff Committee or its counsel.

4. The Tariff Committee will solicit funds for the industry's tariff revision activities through the key men in each of the groups involved.

S. L. Willson, vice-president of the association, presided at the preliminary tariff conference referred to above.

After outlining the purpose of the meeting, he called on O. M. Porter, secretary of the association, to review the association's activities in organizing the industry for united action in tariff revision. Mr. Porter spoke briefly on the appointment of the association's tariff committee and referred to requests which had been made as early as March 8, 1928, to the secretaries of affiliated and allied associations to have briefs covering the tariff needs of their branches of the industry prepared and filed with the Association's General Tariff Committee, in order that it might present the industry's united front at hearings during the pending tariff revision.

Henry W. Stokes, chairman of the Association's 1921-22 General Tariff Committee, and A. D. Coffin, a member of that committee, reviewed the procedure and accomplishments of the preceding tariff revision campaign.

C. G. Parker, of Wise, Whitney and Parker, counsel for the Association and the Import Committee, discussed the prospects for revision of the present tariff law.

W. B. Bullock, manager of the Import Committee, outlined briefly the accomplishments of the committee in enforcing the tariff law so as to prevent the importations of misclassified and undervalued papers, and discussed the proposed tariff revision program for the industry.

Start Work on Paper Mill at Lynchburg

LYNCHBURG, Va., December 31, 1928.—Construction work on the paper mill of John H. Heald Company is progressing well, according to information from the office of the Heald Company, and the mill is expected to be in operation by April 1, 1929.

The first activity in connection with the mill was the tearing down of some of the property of the Heald Company to make way for the erection of the mill and this was begun about the middle of last October.

The mill is being built as a result of the recent merger effected between the Mead Paper Board Company, of Dayton, Ohio, and John H. Heald & Co., of Lynchburg.

The factory plans call for a structure of the most modern character, and the plant will be made of brick and steel and fireproof.

Simplification of Grocers' Bags

Manufacture of paper grocers' bags is 95 per cent in conformity with the simplified program adopted by the industry, according to a statement just made public by the Division of Simplified Practice of the U. S. Department of Commerce. This program, as originally adopted by the industry, reduced the variety of bags from 6,280 to 4,700.

Important Changes In Paper Mill Ownership

Canadian Interests Purchase Port Arthur, Ont., Plant of Consolidated Water Power & Paper Co., of Wisconsin Rapids—Mosinee Paper Mills Co. Acquires Bay West Paper Co.'s Plant—Little Change in Operating Arrangements Expected

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 31, 1928.—With the coming of the new year, two important changes of ownership in paper mills are announced. The Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., has sold its Canadian mill to the Abitibi Power and Paper Company, and the Bay West Paper Company, of Green Bay, Wis., has been sold to the Mosinee Paper Mills Company, of Mosinee, Wis.

The Consolidated's subsidiary is the Thunder Bay Paper Company, of Porth Arthur, Ont. All of the capital stock has been sold to combined Canadian interests, of which the Abitibi company and the Canadian Power and Paper Company are the principal representatives. The amount of the consideration was not made public by George W. Mead, president of the Consolidated, when announcement of the sale was given out.

This deal takes in all of the Consolidated's Canadian interests except private timber properties which are retained to supply the company's mills in Wisconsin. With the Port Arthur mill goes the timber grant of the Crown Government, which has made it possible for the Thunder Bay company to cut pulpwood on lands belonging to the Government.

Canadian expansion was first attempted by the Consolidated company in February, 1922, when it purchased the pulp mill of the Kaministiquia Pulp and Paper Company. The pulp was manufactured for use in the Wisconsin mills. In 1926 the company began building a large mill about two miles from the pulp mill for the manufacture of news print. One machine was placed in production in August, 1927, and a second machine in March, 1928. The mill was producing 225 tons of news print daily, and was among the fastest mills in the industry.

This sale in no way affects the other mills of the company, according to Mr. Mead. The manufacture of news print will continue at Wisconsin Rapids and Biron, Wis., where the production is 325 tons daily.

In acquiring the Bay West Paper Company, the Mosinee Paper Mills Company merely brings into its possession one of its principal marketing outlets, in line with its policy of developing specialties and non-competitive lines. All of the capital stock of the Bay West company has been sold to the Mosinee organization.

The Bay West company was organized five years ago for the manufacture and sale of napkins, crepe papers and toweling. Shortly afterward it began making a sulphate towel, using Mosinee paper. The business grew steadily until the company was taking a considerable tonnage from the Mosinee mill. There are only two companies in the United States making sulphate towels, which have been reported as superior to any other on the market. It is believed that the combined resources of the two companies will mean a greatly increased sale.

There will be little change from the present operating arrangements. Frank P. Vaughan will continue as general manager of the Green Bay plant. The board of directors will be the same as the Mosinee organization, whose officers are: President, A. P. Woodson; vice president, H. L. Dessert; secretary, George L. Ruder; treasurer and general manager, Frank P. Vaughan.

Nekoosa-Edwards Expansion Program

The $2,000,000 expansion program started by the Nekoosa-Edwards Paper Company at its mill at Nekoosa, Wis., has progressed to the point where part of the new equipment will probably be in operation in February. The rebuilding and installations will not be fully completed until sometime next summer, however. As a result of the changes, the Nekoosa mill will produce kraft exclusively.

Present production of the Nekoosa plant is 45 tons of sulphite pulp, 56 tons of kraft pulp and 110 tons of paper. The expansion program includes the removal of the two sulphite digesters, the installation of three new five ton kraft digesters, and possible installation of another at a later date. The mill will then have five kraft digesters, with a possible kraft production of 200 tons. About $300,000 will be spent to improve the four paper machines. The pulp tonnage will be sufficient to permit a fifth machine to be added, giving a total paper production of 180 tons daily.

Building operations at Nekoosa include erection of a new wet machine room, 90 by 175 feet in size, two stories, and of brick, steel and concrete. A rod mill will be installed for the refining of sulphate stock, eliminating to a large extent the use of beaters and jordans. This unit with its machinery will cost about $312,000. In the near future a kraft bleach plant will also be built, at a cost of $150,000. The company has never operated one before.

Some changes are also being made at the company's mill at Port Edwards, Wis. About $200,000 is being expended for a new boiler plant and a 210 foot smoke stack. A new 850 h.p. boiler is being installed to furnish steam power for the generators, using stoker equipment of the pulverizing type. A second boiler and steam plant of the same size will be installed later at Port Edwards, to assist in supplying power to the Nekoosa mill. Later the company may place a similar boiler in the Nekoosa plant.

All of the engineering and construction work is being handled by the company's own engineering department, with E. P. Gleason in charge. L. E. Smith, C. E. Youngchild, Wesley Youngchild and Frank Pelot are assisting.

It is stated by L. M. Alexander, president, that the company will have an ample wood supply for many years to come, assured largely through the vast tree planting program which has been in progress for the last two or three years. When the mill begins operating on an exclusive kraft basis, about 75 men will be added to the crew. It is possible that one or two converting concerns may be induced to build plants at Nekoosa.

News of the Industry

Increased production in 1929 is predicted for the Ahdawagam Products Company, of Wisconsin Rapids, Wis., by Frank R. Walsh, secretary-manager. New machinery will be installed for that purpose, although the detailed plans have not been made public. The equipment was overhauled about a year ago and considerably more modern machinery installed.

The present output includes nine to ten carloads of paper boxes a week, using a crew of seventy men. The improved machinery has made it possible to turn out as much work with one shift as with two before. All of the board turned out by the Consolidated Water Power and Paper Company at Wisconsin Rapids is utilized by this company, and about 75 carloads are shipped in each year in addition. George W. Mead, head of the Consolidated, is president of the company, and C. K. Crouse is sales manager.

Paper mills and allied industries in Wisconsin will receive approximately $60,000 in tax refunds from the federal government, according to appropriations which congress is considering at the present time. The largest of these are: Flambeau Paper Company, Park Falls, Wis., $17,523.79, Rhinelander paper Company,

Rhinelander, 320,461.21, and Whiting Paper Company, Stevens Point, Wis., $11,165.81. Others included on the list are: Appleton Coated Paper Company, Appleton, Wis., $703.80; Combined Locks Paper Company, Appleton, $2,886.07; Marathon Paper Mills Company, Rothschild, $744.82; F. J. Sensenbrenner, Neenah, $2,395.77; S. F. Shattuck, Neenah, $712.50; Stevens Point Pulp and Paper Company, Menasha, $900.87; Wisconsin Box Company, Wausau, $2866.04; Wisconsin River Paper and Pulp Company, Neenah, $2,279.23.

Sixty employees of the Rhinelander Paper Company, Rhinelander, Wis., were given honor certificates at the closing banquet recently of the safety school conducted there during the fall months. This is the first school of the kind held in Rhinelander, and is one of those conducted under state auspices in fourteen cities N. F. Becker, manager of the paper company, was general chairman. The principal addresses were given by Professor W. C. Hewitt, of Oshkosh, and R. A. Keown, of the Wisconsin Industrial Commission. A safety school for foremen is to be organized at Green Bay, Wis., to start early in the new year. H. O. Eiken, director of the vocational school, will be in charge.

Herman Weber, who has been in charge of the American Lakes Paper Company, and Arthur May, assistant engineer of the Thilmany Pulp and Paper Company, Kaukauna, Wis., have resigned. The American Lakes company is a branch of the Thilmany organization. Mr. Weber's plans have not been announced. He has been a Thilmany employe for seven years. Mr. May severs a three year connection, has taken a position with the Shartle Brothers, paper mill machinery manufacturers of Middletown, Ohio.

Rogers Paper Mfg. Co. Makes Repairs

MANCHESTER, Conn., December 31, 1928.—The Rogers Paper Manufacturing Company, purchaser of the A. Willard Case mill on Mill street, is making extensive alterations which it is hoped will be completed by early next year. The changes are being made to increase the output of paper.

Since purchasing the mill on November 1 the Rogers Company made many changes in the interior. A new steel smoke stack that will have a larger flue than the brick chimney that was used at the mill is being erected. It will be 125 feet in height, which is considerably higher than the old brick stack.

Aceto-Smith, contractors, are now at work building a foundation for the new stack. An enlargement of the dry loft is being made which will make possible the installation of more machinery for drying out the paper.

Any additions that will be made, or that are being planned, at the mill at present are for the dryer fans. The enlargement of the stack is going to give a better draft and while the boilers will be added to later there will be no necessity now for increasing the power at the mill. The work of repairs and changes has kept men working night and day in the effort to get the changes made, and the mill in operation in full by January 1.

The changes being made in the increasing of the capacity of the dryloft is to bring about a much more rapid method of getting the paper properly finished and ready for more rapid shipment. While the work that is being done at this time does not mean any great enlargement to the plant as far as extra buildings are concerned it does mean that the finishing of the paper will be accomplished more rapidly than formerly and there is a possibility that later on additions may be built.

Rahn-McWhorter Paper Co. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

SALEM, Ore., December 21, 1928—Rahn-McWhorter Paper Company, has been incorporated in Oregon, with a capital stock of $7300, to do a wholesale and retail paper business. Members of the company are Arthur J. Rahn, H. C. McWhorter and James G. Heltzel.

Reforestation at Bogalusa

Col. W. H. Sullivan, vice president and general manager of the Great Southern Lumber Company, of Bogalusa, La., writes:

"Henry E. Hardtner is the Father of Reforestation in the South. Enclose you herewith copy of letter he sent to us, that explains itself. It may be of interest in developing further reforestation sentiments among your subscribers."

Mr. Hardtner's letter to Col. Sullivan is as follows:

"I have watched with interest and enthusiasm the development and progress of reforestation at Bogalusa. Years of close study of forest problems, of utilization of idle cut-over forest lands and early experiments in reforestation at Urania caused us to recognize the herculean work of forest regeneration which you commenced at Bogalusa in 1921. I know the magnitude of the work; the disasters which you must face; the disappointments and discouragements; the skepticism of the public and above all else the investment, the tremendous expenditure of money that was necessary to insure success. I was afraid for a long time that the task would prove too difficult for even great captains of industry like yourselves, to carry on for years and then passed on to successive generations.

"It is gratifying to me to know that you had the determination to succeed and my visit today of your reforested areas was a trip into wonderland. I knew the land in its naked, desolate state only a few years ago, and now that same land as far as the vision will penetrate is covered with a mantle of green thrifty pine trees, growing rapidly and rearing its tops heavenward until we shall again in the near future listen to the sweet, but solemn music of the soughing of the majestic pines. Your success is far beyond my greatest expectations, and your greatest difficulties are over. Go on and on to perfection, and the sentiment, patriotism and confidence in a successful business investment will inspire the admiration of an enlightened public. You have done more real reforestation work than any other agency in America, and I doubt if the old world can afford such an example of forestry of such magnitude. If the Federal and State Governments could arouse the people to action there would soon be no problem of idle forest lands.

"Your system of forest management is perfect."

Swedish News Print Mills Report Full Orders

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 31, 1928.—Swedish news print mills are reported to be well supplied with orders and are not in a position generally to undertake any more deliveries for the first half of 1929, according to the Department of Commerce.

In fact it is understood that there is not a great deal left for sale during the second half of the year. A few sales and contracts for 1929 delivery are being concluded, but on the whole the market from now on can be expected to show less activity, Swedish dealers believe.

The demand for kraft paper continues brisk, and there has been a sale exceeding the normal production for this period during the first half of October. The demand for greaseproof of standard quality has been better and the mills are now reported to be booked with orders for several months ahead.

Acid From Mill Alleged to Injure Fish

SEATTLE, Wash., December 21, 1928—Sportsmen of Washington near Montesano and Hoquiam have complained that acid from the plant of the Groys Harbor Pulp and Paper mill is threatening to exterminate all sea run fish. The matter is under consideration by the county game commission.

It is said that dead salmon were being found in large numbers in salt water. The tendency of the acid to hug the bottom of the streams is particularly fatal to fish, the fishermen state. A chemical analysis of the water has indicated that the acid is permeating all parts of the harbor, according to the sportsmen.

Demand For Paper Livelier In Philadelphia

Seasonally Active Standard Grades In Excellent Request During Closing Days of Year, With Slightly Higher Prices—Keen Competitive Bidding Subjects Some Lines of Paper to Unsettled Market—Paper Mills Attractive Promotion Plans

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 31, 1928.—Closing days of the old year brought a livelier spurt to some of the seasonally active grades of paper which were much sought in a last minute rush of orders for small lots. No definite trend to the paper markets of the coming year was disclosed. While a few lines of paper were subjected to an unsettled market, due to keen competitive bidding, those standard grades of paper which were consumed in larger volume with the holidays were held fairly steady as the last minute buying created a broader market with slightly higher prices.

Distributors are given every encouragement by the manufacturers with attractive offers for New Year restocking in order to obtain volume of production and create steady operations until the uncertainty of the coming business trend is cleared. It is due to the tendency of the paper distributors to hold off orders until after inventory that the manufacturers are affecting sales promotion plans that are so alluring that orders will be forthcoming despite uncertainty of the future.

Converters are just as keenly concerned in the liveliness of present day competition as are their allies in the manufacturing of basic paper wares. Bags have been subjected to the bidding of the smaller local producers despite the steadier trend of prices among the larger nationally prominent concerns. While this bidding is confined to smaller houses it has made inroads among the margins of those firms least able to cope with modern methods of corporate control whose production and larger capacity provides for year round operations and steady markets and so confine unsettlement to the local field.

Gummed tapes are likewise made targets for manufacturers gunning for orders and while holiday consumption was proportionately larger there was no steadiness for future stocking. Sanitary products are among the paper commodities in the line of urgent campaigning for sales at this season. Tissues, crepes and napkins are being offered with a view to attracting orders in the early weeks of the coming year.

Wholesale Paper Merchants Make Merry

A merry Christmas occasion was that which featured the program of the Wholesale Paper Merchants Association of Philadelphia at its December meeting in the Foyer of the Benjamin Franklin Hotel last Friday. With 28 members joining in celebrating the Yuletide, there was a banquet served, with a social feature of intimate moving picture shows that brought to memories the enjoyments of the Fall outing held at the Roxborough Country Club. F. B. Selle, who is associated with the American Forest Products Company, reeled off the three large films he had made of the recent outing with much merriment renewed in the events staged in the wide open spaces by the members and recalled on the screen. Supplementing the Roxborough outing a set of films of foreign places of interest visited by Mr. Selle on his recent trip abroad were shown. The members were greeted with the season's compliments by the president of the association, George K. Hooper, of the Hooper Paper and Twine Company, and then each joined in the merriment with brief expressions of mirthful comment or happy thought of the festive occasion and its participants. The entertainment committee, with E. L. Richards of the local branch of the Buffalo Envelope Company at its helm, provided the day's diversions and then distributed to each member a memento of Christmastide and the goodwill of his fellows in the organization.

There will be held on January 18 a specially interesting meeting of the wholesale organization with relation to the twine branch of the industry and the progress that this allied industry has made in trade ranks since it became one of the factors entering into the wholesale merchants association activities. A summary of the twine trade will be laid before the membership, with a survey of its potential value to the paper merchant.

Paper Trade Joins Typothetae in Christmas Jubilee

Paper men joined hands with allies in the Graphic Arts trades in the annual Christmas party staged by the Typothetae at the Public Ledger Club last Monday. There were more than 180 members of the allied groups present at the dinner graced by the presence of Mayor Harry A. Mackey of Philadelphia, members of the Board of Education and the teachers of the printing classes at the McCall Public School. Miss Margaret Maguire, principal of the school, spoke to the members on the good work being accomplished at the McCall School in promotion of interest among the youth of the city in the Graphic Arts industries. The students at the School staged a minstrel show with humorous quips on the members as part of the program. The paper branch of the Typothetae was represented by leaders of the industry active in the printing organization, Norbert A. Considine, and Leonard A. Peck, of the Paper House of Pennsylvania, W. S. Wilcox, of the Wilcox Walter Furlong Company, Morgan H. Thomas, of the Garrett-Buchanan Company, and G. W. Ward, of the D. L. Ward Company, Richard Hartung, of A. Hartung, Inc., and A. B. Sherrill of Riegel and Co., Inc.

Modern Christmas Cheer Methods for Garrett-Buchanan Co.

The Garrett-Buchanan Company provided quite an innovation in the local paper industry on Christmas Eve by putting its annual Employees Christmas Entertainment on the air, broadcasting through WCAU from 2:00 o'clock to 3:00 o'clock in the afternoon. The entire personnel, 180 in number, aided by a talented quartette, all under the direction of Henry Hotz, gave a Christmas music program, which was received with a considerable amount of favorable comment from listeners in.

Morgan H. Thomas, president of the Company, who is always an enthusiastic sponser of these affairs, spoke for a few minutes before the microphone voicing his sentiments in the following few words: "It is our annual custom on the day before Christmas, to have, under the direction of Henry Hotz, a musical program of singing by our quartette and carols by our employees. Wishing to share the pleasure with others, we decided to broadcast this hour, and hope you have enjoyed the music with us. We invite you to visit our stores at 12 to 20 South Sixth street, and believe you will agree with us that we have a first class equipment for selling paper and twine. Garrett-Buchanan Company wishes you a Merry Christmas and a Happy and Prosperous New Year".

Dill & Collins Co. in Yuletide Celebration

A dual celebration was held by the business family of the Dill & Collins Co., paper manufacturers, in its mills and at the Arcadia Cafe, in the Widener Building, during the holiday week. President Grellet Collins, of the company, just returned from a tour of South America, greeted the sales and executives of the firm at the banquet held at the Arcadia Cafe, extending to them the season's compliments and joining in the festivities last Friday evening. In turn, W. R. Maull, vice president of the company, extended a warm welcome to his associates and then gave place to W. Kornkamp, advertising manager of the firm, who reviewed the successes of the past year and gave expression to the cheer-

fulness of the future and the outlook for the Dill & Collins Co. in the coming year. Miss Lorraine Bell, of the advertising staff, was chairman of the entertainment committee, staging the Arcadia banquet, while Miss Eleanor Raub, nurse in charge of the dispensary at the mill, arranged the employees entertainment held at the plant, Richmond and Tioga streets. The mill entertainment was given for the benefit of the children of the workers who were treated to a dinner and Christmas tree set in the Cafeteria of the plant last Saturday, while Santa Claus, on behalf of the firm, distributed toys and gifts to the workers and the youthful merrimakers.

Huff Paper Co. Entertains for Christmas

The Huff Paper Company, Denckla Building, was host to the employees at a Christmas party staged in the headquarters here on December 22. The members of the firm, the sales staff and office force, were united at the dinner table, while talent gave a diversified program of entertainment, followed by a dance.

Paper Trade Association Meets

Members of the Philadelphia Paper Trade Association met on Friday at the Philadelphia Chamber of Commerce in the final quarterly session of the year. President Simon Walter presided, welcoming his associates in the organization, extending the season's greetings, and then reviewing the past year's activities. He gave an optimistic outline of the coming business cycle for 1929. The meeting was particularly interesting to Harry Keffer, of the Johnston Paper Company, of Harrisburg, Pa. who journeyed here to be the honored guest of his fellows in the organization. His firm is represented in the enrollment of the Philadelphia organization. A resolution of sympathy was presented by President Walter and unanimously adopted by the members, to be extended to the family of David Lindsay, Sr., whose death occurred just before the holidays at his home in Wilmington, Del. He is the father of David Lindsay, Jr., head of the Lindsay Paper Company and a former president of the Philadelphia Association.

Lewis T. Condon Passes On

Following the death of Lewis T. Condon, for many years associated with the Philadelphia paper trade as the local representative of the Continental Paper and Bag Corporation, his duties as manager of the local district have been temporarily taken over by J. H. Wantling, for the past five months looking after local business for the firm owing to the illness of the late Quaker City sales manager. Mr. Condon had been in poor health for the past year and for five months was obliged to give up his work to take treatments in a local hospital. He died at his home in Morristown, N. J., December 22. He was employed originally with William Allen on 4th street below Market, and later made the rounds of the trade as mill representative for the Bardeen interests of Otsego, Mich. Before joining the Republic Bag and Paper Company he was in the paper brokerage business on his own account. Later he was affiliated with the R. T. Moorehouse Company and ten years ago joined the York Haven Paper Company and was with that firm when it became identified with the Continental Paper and Bag Corporation. He was sales manager for the company at the time of his death and was on leave of absence for illness. He was also in charge of the wrapping sales of the Southern Division of the International Paper Company.

Kalo Paper Co. Buys Eureka Blank Book Plant

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 1, 1929.—The Kalo Paper Company, paper converters, of 200 Race street, have bought the South Hadley Falls plant, machinery, stock and goodwill, of the Eureka Blank Book Company of this city. The factory and site will be sold to other parties or leased The plant was built by the Gummed Products Company in 1923, and was taken over in 1925 by the Eureka concern for the manufacture of intaglio, art and fancy covered papers.

Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 31, 1928.—Chas. A. Esty, the new managing director of the Carter, Rice & Co., Corporation, has sent a personal letter to the printing trade, explaining the reasons for the delays on the alterations of the Carter, Rice Building at 250 Devonshire street, hoping they will overlook any inconveniences they may be subject to until such time that the work is completed. He has no doubt but at that time, with every modern appliance for handling the business quickly and efficiently, there will be a vast improvement in service to customers. Mr. Esty also took the opportunity to thank customers for their patronage during the last year and expressed the hope that they will have a pleasant, prosperous New Year.

For the sixth mailing in the Bristol campaign being conducted by Carter, Rice & Co. Corporation, the firm has selected Winner Blank, prepared in the shape of a calendar pad for the year, produced in four colors. The calendar will be no larger than the regular mailing of 6 x 9, and will be sent to the entire list.

John Carter & Co., Inc., are putting out a new line of bond, Art-in-Industry, made by a patented process by the Taylor-Logan Company, papermakers, Holyoke, Mass. John Carter & Co., Inc., are the New England distributors of this line.

F. Parker Holdridge, formerly with Carter, Rice & Co., Corporation, will be associated with the Globe Paper Company, white Paper Division, at 10 High street, as of January 1.

In Tileston & Hollingsworth Company's December "How," Editor A. V. Howland, under the caption of "That Which Was Lost, is Found," states that he has just returned from a trip to the Northwest, but contrary to rumors, did not go out there to buy raw material or to establish a branch.

To Build Coating Room at Harvey Mill

WELLSBURG, W. Va., December 31, 1928.—B. O. Cresap, Sr., contractor, of Wellsburg, was awarded the contract for the new coating room to be added to the plant of the Harvey Paper Company, recently purchased by the Pillsbury Flour Company, of Minneapolis, Minn. Work was commenced on Wednesday morning, December 12. The new addition will be erected to the south of the paper mill and will be a one story structure. This is the first of a general expansion program. Officials announced that the company planned to reconstruct a building on the old "Red Onion" site at Eighteenth and Yankee streets, recently purchased by the Reid Realty Company.

Upon the completion of the coating room, which is expected in the late winter, work at the paper mill will commence. It is expected that within a year a new sack factory will be erected but for the present the paper made will be shipped to another factory where the sacks will be made and printed for use in the Pillsbury mills.

Work of excavating the foundation was begun by a force of men under Mr. Cresap. New machinery has arrived and is being installed in the old mill.

Crown-Willamette Planting Trees

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, ORE., December 21, 1928—Reforestation of approximately 3000 acres of logged-off land lying on both sides of the highway between Seaside and Cannon beach, Oregon, owned by the Crown-Willamette Paper company is well under way at present.

Following reforestration work done on Young's river holdings, this concern now has a crew of 40 men engaged in this new location planting Sitka spruce trees.

A shipment of 120,000 young trees of the spruce variety were received recently in the beach region from the company's nursery. The total planting will run from 1,000,000 to 1,500,000 trees, ranging from 300 to 500 trees per acre, according to the density of growth of the young timber.

Paper Market Rules Fairly Steady In Chicago

News Print Situation Shows Signs of Improvement With Heavy Demand Anticipated For First Quarter of New Year—Fine Paper Merchants Generally Optimistic Over Outlook for Future—Wrapping Paper Houses Taking Inventories

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 31, 1928.—The inventory season is on and visitors in Chicago are more or less of a rarity just at this time. The paper industry, from all Chicago reports, is evidently in fair condition with a spirit of optimism prevailing that was noticeable for its absence among a number of paper men at this time last year. If the news print situation was definitely clarified the entire trade in this vicinity could be described as steady and with good prospects for 1929. However, there are some contract orders being placed for news print and that market is said to be experiencing a fairly heavy demand with the first few months in 1929 expected to clear up the price situation in good shape. The fine paper houses fared well during the past year, even better than expected, according to reports, and merchants are looking ahead to a good 1929. Tissues ran full speed up until Christmas and mills are even now reported as in the act of catching up with the heavy demand, while the wrapping paper houses are taking their inventories with a splendid season just behind them and good prospects for the immediate future.

The board market is not expected to improve materially until the middle of January when the demand is expected to pick up. The market is steady and prices firm. Book paper continues to be fairly active while waste papers are reported as in active condition with book stock reported especially active at this time.

W. H. Mahnke Passes On

W. H. Mahnke, treasurer of Dwight Brothers Paper Company, Chicago, died suddenly December 22, his death being due to pneumonia contracted shortly following a major operation which had seemingly been successful. Mr. Mahnke was 48 years old and he had spent his entire business career, a period of thirty years, with the Dwight Brothers organization. Funeral services were held from his home in Oak Park, Ill., on Wednesday, December 26. A large number of friends and business associates of the extremely popular and well liked paper man attended the funeral.

Mr. Mahnke is survived by his wife and two children, a son eighteen years old, and a daughter aged sixteen. The shock of his unexpected death is still prevalent in Chicago and outside of the city where, in the course of so many years, Mr. Mahnke had made many fast friends.

E. A. Hall, Jr., to Join Crown-Zellerbach

Edgar A. Hall, Jr., general manager of Pilcher-Hamilton-Daily Company, Chicago, has resigned from that firm, resignation to be effective February 15, to become associated with the Crown-Zellerbach Corporation in a capacity and with location yet to be determined. It will be necessary for Mr. Hall to leave Chicago after having spent practically his entire business career in this locality, following in the footsteps of his equally well known father Edgar A. Hall.

Mr. Hall has been with the Pilcher-Hamilton-Daily Company for a period of 23 years and in that time has become one of the most active and efficient representatives of the coarse paper trade in Chicago and its immediate vicinity and has won national recognition for his progressive workmanship. He has seen the Pilcher-Hamilton Company grow to a commanding position in the Chicago trade and was one of the factors in the merger of the Pilcher-Hamilton organization with that of Daily Brothers, a few months ago.

While being a keen student of business affairs, Mr. Hall is almost equally well known in the association field. He served as president of the Chicago Paper Association for two terms and in that time saw that association bring together a large number of firms into a better understanding that developed into a considerable improvement in business ethics and tactics in this territory. Mr. Hall has also pressed the work of studying costs and cost operations in the paper business and is recognized as an authority on these lines. He is equally well known from his associations with the National Paper Trade Association.

The prominent Chicago paper merchant is possessed of a splendid personality and he numbers his friends in high and impressive figures. The Crown-Zellerbach organization is to be congratulated on this splendid acquisition to its executive force.

Chicago Paper Association to Discuss Costs

The Chicago Paper Association will hold its next meeting at the Bismark Hotel, Chicago, Tuesday, January 8, according to word received from Leo S. Altholz, president of the association. This first meeting of the New Year will feature a continued study of the matter of costs and cost operations that has characterized a part of the progressive efforts made by the association during 1928. The cost accountant representing the firm of engineers acting in a secretarial capacity for the association will submit complete charts for the inspection of the large number of members expected to be present.

News of the Trade

The Chicago offices of the Champion Coated Paper Company are being removed from Room 1241 in the Conway Building, 111 West Washington Street, Chicago, to a suite of offices in 1841 to 1843 in the same building. This change is made necessary for the sake of convenience, accommodation and to take care of present business of this sales representation of the Champion Coated Paper Company with mills located at Hamilton, Ohio. R. H. Butterworth, who is better known to the paper trade in this vicinity as "Bob," is the representative of Champion in this section. G. E. Runcie has also been a valuable member of the sales force for some time. The Champion offices have been located on the twelfth floor of the Conway building for six years and it will take a call or two to make the many visitors to this popular sales office familiar with the eighteenth floor location.

Fred A. Roll, Chicago sales representative of the Wrenn Paper Company, Middletown, Ohio, makers of blotting papers, is spending the holiday season with his family in the East. Mr. Roll has recently been appointed Chicago representative of the Wrenn organization with offices in Room 725 of the Conway Building, 111 West Washington Street. Mr. Roll has been connected with the Wrenn Paper Company for a considerable length of time and his experience is already making itself felt in this territory.

Price of Cellophane Reduced

Effective November 30, 1928, another substantial reduction was announced in the price of regular Cellophane, and also in Moisture-proof Cellophane.

This represented the sixth price reduction on regular Cellophane made by the Du Pont Cellophane Company during the past four years. The price at that time was 162 per cent higher than it is today.

As with former reductions, it was based on present volume plus a forecast of what is possible with both regular and Moisture-proof Cellophane available at a lower price.

Canadian Pulp and Paper Convention Plans

Three Provincial Premiers to Speak at Annual Banquet—News Print Situation Will Probably Be Discussed in Detail—Dr. W. D. Bancroft to Address Technical Section on Science and Cellulose—News Print Service Bureau to Hold Annual Meeting

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 1, 1929.—Some interesting announcements in connection with the efforts towards control of the output of the news print mills in Canada are expected at the annual meeting of the Canadian Pulp and Paper Association, which takes place in Montreal on the 25th of this month. A notable feature is the fact that at the banquet arranged for the evening three Provincial Premiers will speak, namely Premier Taschereau of Quebec, Premier Ferguson of Ontario, and Premier Rhodes of Nova Scotia. Each of these gentlemen has been greatly concerned with the problem of over-production in the news print industry, and it is anticipated that they will deal with the question in detail.

On Thursday of the same week the technical section of the annual pulp and paper conference will hold a luncheon at the Ritz-Carlton Hotel and Dr. Wilder D. Bancroft, professor at the Baker Chemistry Laboratory at Cornell University, will address the members on "Science and Cellulose."

In connection with the various meetings of the week during which the conference is being held, the News Print Service Bureau of New York City will hold its annual meeting in the Ritz-Carlton Hotel on Thursday afternoon.

Pulp and Paper Exports Up for Year

Despite the depression in the news print industry, due to over-expansion, the figures as to exports show a progressive increase.

For the first eleven months of the year there was an increase of $13,479,625 in the value of wood pulp and paper exports, the total being $174,756,988 as compared with $161,277,363 in the eleven months of 1927.

Wood pulp exports for this year declined $1,671,248, the total being $41,512,147 as against $43,183,395 in the eleven months last year.

Exports of paper showed an increase of $15,150,873, the total for eleven months of the current year being $133,244,841 as compared with $118,093,968 in the eleven months of 1927.

Pulpwood exports in the eleven months amounted to 1,482,598 cords valued at $15,805,576 as compared with 1,489,314 cords valued at $15,162,484 in the eleven months of 1927.

Pulpmakers Oppose Duty on Stone

Pulp and paper makers have entered a strong protest against a proposed duty of one dollar per ton against lime rock and marble coming in from the United States. An application for this duty was made before the Advisory Board on Tariff and Taxation by J. Sutton Clark, of St. George, N. B., and by the Winnipeg Supply and Fuel Company, of Winnipeg, through D. C. Henderson. In opposition to this application was a lengthy memorandum from the Canadian Pulp and Paper Association, submitted by John Bain, of Ottawa. In anticipating the opposition of pulp and paper manufacturers the stone producers declare that a duty of $1 per ton on limestone "would mean very little, if any, to the cost of paper, as a duty of $1 a ton would not mean more than 10 cents per ton to the cost of paper." Pulp mills, the stone producers' brief says, use 350 pounds of limestone to each ton of paper products.

The rock is made into sulphite of lime, which is used to make their sulphite pulp. The steel companies use it to extract the sulphite from the ore. This must be high in calcium and cannot be considered refuse rock.

About 200,000 tons is now imported annually, and it is expected that in the near future this will be increased to 500,000 tons. It is maintained that an ample supply exists in Canadian quarries, and that the duty would keep the business in Canada.

The pulp and paper makers maintain that the proposed duty of $1 per ton would be equivalent to from 66 2-3 per cent to 150 per cent ad valorem, and that it would be disastrous to the export business of the country.

Leipzig Fair To Be Held March 3-13

The Leipzig Trade Fair, by far the largest goods exchange in the world, will be held from March 3 to 13, 1929. Following its traditions of 700 years, the Fair will welcome exhibitors and buyers from all parts of the world. Visitors to the Fair this year will be able to shop profitably among some 11,000 elaborate exhibits, assembled from twenty-four countries. Fully 200,000 active buyers from 44 countries will attend, of whom 30,000 will come from countries other than Germany. No other industrial exchange attracts so cosmopolitan a group of business men, or approaches the Leipzig Fair in the variety of its exhibits, and the volume of business transacted.

Housed in the largest exhibition buildings in the world, the Fair forms a great "city within a city," organized from long experience for the convenience of all. The displays in each division form a cross section of an entire industry, often under a single roof. Months of travel to widely scattered world markets are thus eliminated. Special preparations have been made to serve visitors this year in the matter of banking facilities and the arrangement for packing and shipping goods. As the world's largest and busiest market place, the Leipzig Fair offers an unsurpassed opportunity for establishing live business contacts and entering world markets.

At the last spring Fair more than a billion dollars worth of goods were sold within a week, of which one-half were for export, and subsequent orders greatly increased the total. Leading business men of many countries have been quick to take advantage of the opportunity. The spring Fair will have three times as many exhibits, and ten times as many buyers as any pre-war Fair. America will be adequately represented by some seventy significant exhibits of its leading products, and 2200 buyers from all parts of the United States will attend.

Detailed information concerning the Fair may be obtained by addressing the Leipzig Trade Fair, Inc., 11 West 42nd Street, New York.

Interlake Tissue To Build Extension

TORONTO, Ont., December 24, 1928.—At the regular quarterly meeting of the directors of the Interlake Tissue Mills, Limited, in Toronto this week, it was decided to construct an addition to the mill at Merritton, Ont., to take care of the company's expanding business. Plans call for a structure 75 x 100 feet, four stories and basement, to form an extension to the west side of the plant. Standard mill construction will be employed by the contractor, W. J. Trimble. Excavating work has been commenced. The president of Interlake Tissue Mills, Limited, is George Carruthers, a former president of the Canadian Pulp and Paper Association. At the meeting of the directors this week S. F. Duncan was appointed vice-president and treasurer in place of the late I. H. Weldon, while T. A. Weldon was appointed to the board of directors, with William Parks as secretary. The new mill addition will be devoted to the manufacture of light weight paper specialties.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Green Bay, Wis.—The Northern Paper Mills, Inc., has plans maturing for the construction of a new addition, to be two and three-story, reported to cost in excess of $200,000, with machinery. It is understood that bids will soon be asked on general contract.

St. Joseph, Mich.—The Mullen Paper Mill Corporation, Union Bank Building, St. Joseph, lately organized with capital of 60,000 shares of stock, has engaged Billingham & Cobb, 211 Woodward avenue, Kalamazoo, Mich., architects and engineers, to prepare plans for a proposed new mill in this vicinity. As now projected initial unit will be one-story, reported to cost close to $100,000, with equipment. It is said that bids will soon be asked on general contract. The new company is headed by Victor V. Troyer, Constantine, Mich., general manager; Edward D. Dee and F. R. K. Garmany, both of Detroit.

Jersey City, N. J.—Peter J. Schweitzer, Inc., 200 Fifth avenue, New York, manufacturer of tissue papers, carbon papers, and kindred stocks, has plans under way for the construction of a new addition to its plant at 168-70 Cornelison avenue, Jersey City, consisting of one-story extension, 40x220 feet, to present three-story factory, estimated to cost close to $45,000, with equipment. Edward M. Annitto, 310 Duncan avenue, Jersey City, is architect.

Salisbury, Md.—The Pulp Products Corporation, care of R. P. Johnston, 1310 Ridge Place, S. E., Washington, D. C., manager, is projecting plans for the construction of a series of plants for the manufacture of seamless containers of wood pulp, to be used for berries, fruits and kindred service. The initial unit is planned at Salisbury, to be followed by other factories at Cambridge, Crisfield, and Princess Anne, all located on the eastern shore of Maryland. The different units will be one-story, and are reported to cost on an average of $20,000 upward, with equipment. The company is also said to be planning a large central plant at Baltimore, and it is understood that the latter unit will be used for pulp distribution to the smaller plants. R. Bruce Emerson is president.

Newark, N. J.—John H. Carlo & Sons, Inc., 32 Kitchell street, paper goods, is said to be planning early rebuilding of portion of storage and distributing plant destroyed by fire December 23, with loss reported at more than $40,000, including equipment.

Neenah, Wis.—The Wisconsin Carton Company, 902 North Division street, Appleton, Wis., is said to be scheduling erection of a proposed new plant on Lake Street, Neenah, early in the spring, and meantime will arrange all details of construction and place general contract as well as determine equipment installations. New unit will be one-story, and is reported to cost more than $40,000, with machinery. B. C. Koepke is president, and J. T. Mader, secretary and treasurer.

New York, N. Y.—Rogall & Friedman, Inc., care of Bernard Rogall, 4205 Seventeenth avenue, Brooklyn, N. Y., recently organized with a capital of $20,000, is said to be planning the early operation of a local plant for the manufacture of paper boxes and containers. Charles Friedman, 502 Ocean Parkway, Brooklyn, will be an official of the organization.

South Manchester, Conn.—The Rogers Paper Manufacturing Company has work under way on alterations and improvements in mill building of the A. Willard Case Company, on Mill street, lately acquired, and which will be occupied for plant expansion. Work will include extensions in the drying department, new steel smoke stack, 125 feet high, and other miscellaneous betterments. It is proposed to have the structure ready for occupancy at an early date.

Richmond, Va.—The Richmond Envelope Company, 221 Fifth Fifth street, has perfected plans for its proposed plant expansion program, and will award contracts, it is said, early in January for different features of the work. It is purposed to install additional equipment to cost close to $50,000, for large increase in present capacity.

Appleton, Wis.—The Appleton Coated Paper Company, North Meade street, is completing construction of a new plant unit, previously referred to in these columns, to cost about $150,000, with equipment. Flooring is under way and structure will be ready for occupancy at an early date. It will be used for increased output. Lockwood Greene Engineers, Inc., 400 North Michigan avenue, Chicago, Ill., is architect and engineer. Charles S. Boyd is president.

Houston, Tex.—The building occupied by the Flaxman Paper Company, for storage and distributing service, was destroyed by fire, December 24. An official estimate of loss has not been made, but reported in excess of $40,000. The company plans rebuilding at an early date.

Chicago, Ill.—The Sewell-Clapp Envelopes, Inc., has been organized under state laws to take over and expand the company heretofore operating as Sewell-Clapp, with plant at 3026 Franklin boulevard. It is proposed to arrange for increased production. The incorporators of the new company are Mark D. Strong, H. C. Howes and E. J. Schmidt.

Newark, N. J.—The Malay-Ralston Corporation, care of Vaun B. Malay, 1007 Broad street, recently organized by Mr. Malay and associates, with capital of $125,000, is said to be planning early operation of local plant for the manufacture of paper goods, novelties, etc. Herman Blank, 830 Broad street, is also interested in new organization.

Menasha, Wis.—The Menasha Products Company, formerly known as the Menasha Printing and Carton Company, has asked bids for all features of work in connection with proposed new addition to mill on River street, to be two-story and basement, 130x130 feet, estimated to cost close to $80,000, including equipment. It is understood that a list of machinery to be installed is substantially completed and that orders will soon be placed.

Chicago, Ill.—The Davidson Carton Company, 112 West Adams street, organized under Delaware laws with capital of 1,090 shares of stock, no par value, has filed notice of organization to operate in Illinois, for the manufacture and sale of paper boxes and other paper containers.

Oregon City, Ore.—The Hawley Pulp and Paper Company has secured permission from the city to close two streets in the vicinity of its mill, to provide for proposed extensions to two

buildings, for which plans will be completed at an early date. Additions will be used for increased capacity. Willard P. Hawley, Jr., is vice-president and general manager.

New Orleans, La.—The Celotex Company, 645 North Michigan avenue, Chicago, is reported planning expansion at its wallboard mill in the vicinity of New Orleans, to increase present capacity from 40 to 50 per cent. It is understood that work will include erection of new buildings and installation of machinery to cost more than $500,000.

Seattle, Wash.—The Alaska Pulp, Paper and Hardwood Company, care of John F. Ballaine, 4720 Seventh street, N. E., recently organized with a capital of $45,000, contemplates the early operation of a plant for production of wood pulp for paper manufacture. Perry F. Knight, Seattle, is interested in the new company.

Winona, Minn.—Fire, Dec. 20, damaged a portion of the mill of the Union Fibre Company. An official estimate of loss has not been announced. The damage will be replaced.

Toronto, Ont.—The Hinde & Dauch Paper Company, Ltd., 45 Hanna street, Canadian subsidiary of the Hinde & Dauch Paper Company, Sandusky, Ohio, has awarded miscellaneous contracts for erection of its proposed mill addition for the manufacture of corrugated paper products, to be four-story and basement, 150x400 feet, estimated to cost close to $300,000, with equipment. General contract has been let to H. N. Dancy & Son, Ltd., 22 College street, Toronto; for concrete work, to the Castle Construction Company, 507 Dupont street; and for woodwork, to J. D. Young & Apperley, 428 Ossington avenue. Construction will be placed under way at once.

Port Arthur, Ont.—The Abitibi Power and Paper Company, Ltd., Montreal, Que., associated with the Canada Power & Paper Corporation, Shawinigan Falls, Que., and other interests, has concluded negotiations for the purchase of the pulp and paper mill properties of the Consolidated Water Power & Paper Company, Wisconsin Rapids, Wis., at Port Arthur, operated under name of the Thunder Bay Paper Company, Ltd., George W. Mead, president of both organizations. The new owners will take immediate possession, and are said to be arranging for an expansion program. Alexander Smith is president of the Abitibi company.

New Pulp and News Print Organization

A new organization as distributors of pulp and news print will start activities after the opening of the New Year. This new concern is the Stora Kopperbergs Corporation, which will be located at 342 Madison avenue, New York.

The president of the concern is Ossian Ray, who will have charge of the news print department, and the vice president is James Donaldson, who will have charge of the wood pulp department. Mr. Donaldson has been for several years identified with the Scandinavian Pulp Agency, recently amalgamated with the Perkins-Goodwin Company.

It is interesting to note that this new concern becomes the agent for the oldest company in the world, the Stora-Kopperbergslage Aktiebolag, Falun, Sweden, manufacturers of well known brands of sulphate, graphite and sulphite pulp.

Newton Falls Paper Co. Makes Presents

[FROM OUR REGULAR CORRESPONDENT]

NEWTON FALLS, N. Y., December 31, 1928.—Several department heads of the Newton Falls Paper Company were last week the recipients of Christmas gifts from the company in the form of gold coins. R. C. Shepard, treasurer, summoned the men to his office for the presentations which amounted to several hundred dollars. Superintendent Alfred Bryant received another gift which came as a surprise. On returning to his office in the mill he found the room filled with mill foremen and employees who presented him with a handsome gold watch. Mr. Bryant has been acting as superintendent only a few months and the gift to him was entirely unexpected.

Thomas R. Cree Made Manager

Thomas R. Cree has been appointed general manager of the Pittsburgh division of the Alling & Cory Company.

Arthur H. Smith, whose death occurred Monday, December 17, occupied this position since the division was established in 1903. It was in August of that year that Mr. Cree became associated with the Alling & Cory Company and up to the present time has been general auditor of the company and credit manager of the Pittsburgh division.

For many years Mr. Cree has had an active part in the paper trade associations. In addition to serving on many of their important committees he was instrumental in developing the present cost system of the National Paper Trade Association.

THOMAS R. CREE

He has served two terms as director of the National Association of Credit Men and four years as director and president of the Pittsburgh Association of Credit Men.

Other changes in this division include Alan Chandler, manager of sales and merchandising, Fine Paper Department; William D. St. Clair, manager of sales and merchandising, Wrapping Paper and Roofing Department, and Clarence F. Hilty, auditor and credit manager.

Higher Water Helps Pulp Mill

[FROM OUR REGULAR CORRESPONDENT]

CORINTH, N. Y. December 31, 1928.—Several pulp presses were again operating this week at the Hudson River Mill of the International Paper Company here and more grinders were placed into use as the Hudson River raised considerably and relieved a certain amount of tension which has affected activities in the ground wood department during the past few weeks. The rising trend of the river means the employment of more workers in the press rooms and the main plant. It is generally hoped that more snow or rain will fall in order to keep the river at a depth to insure steady work in all departments.

Coty Bag Corp. Increases Capital

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., December 31, 1928.—The Coty Bag Corporation has filed papers with the Secretary of State announcing an increase in the capitalization. The company operates a plant at Watertown where the principal offices are located. Under the increase the capital stock is raised from 5,000 shares to 16,500 shares consisting of 1,000 shares of preferred with a par value of $100 and 15,000 shares with no par value. The papers were filed by B. A. Gilman of Watertown.

Obituary

Arthur Hall Smith

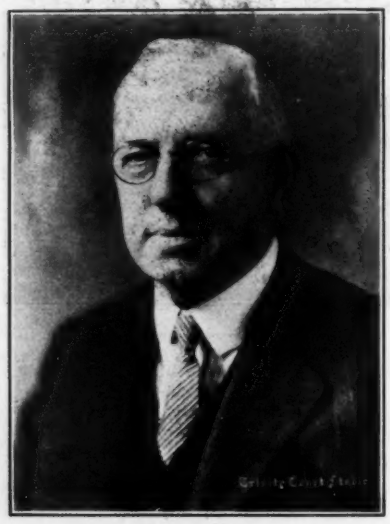
Pittsburgh, Pa., December 24, 1928. Arthur Hall Smith, vice president and general manager of the Alling & Cory Company died at his home Monday evening December 17.

The following eulogy in full was delivered at the funeral services by Dr. W. L. McEwan, pastor of the Third Presbyterian church of which Mr. Smith was a member:—

"Arthur Hall Simth was born in Morrow, Ohio, on November 5, 1859, and was but a few weeks over 69 years of age at his death. His father was Rev. Samuel D. Smith, a Presbyterian minister who held several charges in Ohio. His grandfather was a practising physician.

"He grew up in a house of culture and piety and simple living. Like the homes of all ministers of the Gospel, his father's house was the hospitable refuge for missionaries and preachers.

"He was educated at Ohio-Wesleyan College in Delaware, Ohio. In Detroit in 1898, 31 years ago he was married to Miss Marion



ARTHUR HALL SMITH

Wilson. Without children, their love and comradeship grew stronger with the passing years.

"In 1900 he became identified with the Alling & Cory Company and moved to Pittsburgh. In 1903, twenty-five years ago, he opened the Pittsburgh branch of that company. The 100th anniversary of the Alling & Cory Company was celebrated in 1919, and the 25th anniversary of the establishment of the Pittsburgh branch was celebrated in the summer of the present year. Under the management of Mr. Smith the growth of the business and of the reputation of the company has been remarkable. Of this record, Mr. Smith was justly proud. At the time of his death, he was known as one of the best informed men in the paper business, and was highly respected by all his business associates.

"It is rather remarkable that Mr. Smith's death is the first that has occured among the members of the board of managers and directors since he became a member—20 years ago.

"As the son of the minister of the Gospel, he had his own way to make in the world. He inherited a sound constitution, clean blood, and good brain equipment. He was taught to reverence holy things, and to seek the companionship of good people. He knew he needed an education and he worked to secure it. Having this equipment for life, he had to depend on his own efforts to succeed.

"He was diligent in business and trustworthy in any position he was placed. In small things and in large affairs he was faithful to his trust. He developed executive ability and sound judgment as he assumed larger responsibilities. He made his organization like a company of friends. Each was interested in the welfare of others and all worked together for the good of the organization. He had rare judgment in the selection of men and built up an organization of trustworthy and like-minded workers. When a man was chosen to any position, he allowed him to exercise his own personality and work in his own way, without criticism or interference. His associates loved him as well as admiring and trusting him.

"Loyal hearted, sympathetic, simple and modest in his manners, true and fair and clear hearted, his word was as good as a signed agreement. No wonder he had a high position in the esteem of business men wherever he was known.

"He was sincerely and intelligenly interested in all civic matters and served on important committees of the Chamber of Commerce and the Civic Club. He gave his time and attention as thoroughly to such work as if it related to his personal business. He wanted to render service to the community in which he lived. The loss of such a man from the business and social life of this city will be keenly felt. He was among those who stood for and practised the highest ethics in business and recognized their responsibility to the life of the community in which they live.

"He early united with the church. He lived a consistent and earnest Christian life. He carried his religion into all the relations of life. Whenever he moved his home, he promptly made connections with the Church in that neighborhood. He never failed to ask God's blessing at his table.

"From his early manhood, as soon as he was able to earn his own living, he helped those of his family connections who needed help; and all his life he continued to keep up those obligations which only his heart and feelings laid upon him. He helped and encouraged many young men, but he did not forget the old and lonely and limited.

"He was a careful and diligent worker. He tried to do each day's work in that day. If he had known the day in which part of the experience would be to lie down and die, he would have accepted it without murmuring. He was not afraid to die and he rested in the promises of God. He walked by faith, and his faith was not without works.

"His natural strength was not abated and his eye was not dimmed; but he was ready to answer the summons whenever it came.

"With a slight cold, which did not seem dangerous, but which developed into Pneumonia, but in less than a week, he quietly fell asleep.

John Lewis Perkins

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 1, 1929.—John Lewis Perkins, aged 64, widely known in the paper making and paper converting industry through his ownership and control of the American Tissue Mills, Inc., of this city and South Hadley, and of the B. F. Perkins & Sons, Inc., of Willimansett, makers of paper mill machinery, died Friday morning at his home, 150 Lincoln street, after a brief illness with pneumonia. He had not been in good health for some time but caught cold Monday resulting in pneumonia of both lungs.

Mr. Perkins was the son of Benjamin F. Perkins who founded the business that bears his name and with whom his son John became associated after his graduation from the high school in 1884. In the early days Mr. Perkins, Sr., was a co-worker for a time with Alexander Graham Bell and the first telephone switchboard was made at his machine shop for the Bell Telephone Company, then located at New Haven. Young Perkins assisted his father in his work and was night operator for a time in the local exchange; the first night operator, a fact in which he took pride. In honor of the aid of the Perkinses, No. 1 of the Holyoke ex-

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gives you every thing that you look for in a Save-All

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BIRD MACHINE COMPANY

SOUTH WALPOLE
MASSACHUSETTS

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change has always been reserved for B. F. Perkins & Sons' telephone.

The concern became interested in the manufacture of crepe papers for napkins, towels and the like and finally for a variety of purposes and owing to his energy and ability the business grew by leaps and bounds until it became nationwide in its scope. In a few years it was necessary to separate the tissue paper plant from the paper machinery making plant; and a year or two ago business of the latter had expanded to such an extent that a large new factory plant was built across the river in Willimansett.

The American Tissue Mills, Inc., was also expanding rapidly and took up the vacant space in their Holyoke factory thus created. Previously the concern had acquired a mill at Pearl City and another at South Hadley on the road to South Hadley Center. Both of recent years have largely increased their production. The converting processes for the most part are done at the Holyoke plant.

Mr. Perkins was a member of Holyoke Lodge of Elks, Mt. Tom Golf Club and Holyoke Canoe Club and director of the Park National Bank. Fishing was his chief hobby. Although energetic and a driving force in industry, personally he was a modest man, shunning public office, averse to notoriety, and intensely interested in his home. He was also much interested in the Girl Scout movement and gave the Holyoke and South Hadley Falls Girl Scouts a camp site and camp near his Pearl City mill which the girls promptly christened Camp J. Lewis Perkins.

Besides his wife who was Miss Malvina Perron before marriage he leaves two sons, Benjamin F. and John Lewis, Jr., who have been associated with him of late years in the management of his properties. The funeral was held Saturday afternoon at 2 at the home, Rev. Dr. E. B. Robinson officiating, and burial was in Forestdale cemetery.

David Lindsay, Sr.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 31, 1928.—With the passing of David Lindsay, Sr., head of the firm of the Lindsay Paper Company, 804 Sansom street, Philadelphia, at his home in Wilmington, Del., in the pre holiday week, the local trade loses one of the pioneers of the industry in this section. Mr. Lindsay was 84 years of age at the time of his death which followed an attack of grippe and the complications of the infirmities of age, suffered for two weeks preceding his demise. He was associated with the pioneering paper manufacturing days of the Quaker City and Wilmington, having been a former superintendent of the Jessup and Moore Paper Company and later its vice president, an office he held until his retirement a few years ago, when it was taken over by the present interests. He was also connected with the Keystone Paper Mills, of Upper Darby, Pa., which passed out of existence through a fire that destroyed the plant about five years ago and which were in operation for more than 125 years. In later years he was connected with the Lindsay Paper Company, distributors, in association with his sons, who survive him. They are David Lindsay, Jr., J. Horace Lindsay, and W. Allen Lindsay, general manager of the Tarentum Paper Company, of Tarentum, Pa. Three daughters also survive, Mrs. Clara Gilmore, Mrs. Jennie B. Lewis and Mrs. May L. Evans, mother of David Lindsay Evans, secretary of the Lindsay Paper Company, and his widow Mrs. Irene Brumley Lindsay. Funeral services were held from his home 1100 Broome street, Wilmington, Del., last Monday.

Howard Loring Blake

BOSTON, Mass., December 31, 1928.—Howard Loring Blake, president of the Fort Hill Paper Company, died at his residence in West Roxbury, Wednesday morning, December 26, of angina pectoris. Mr. Blake, who was in his 42d year, was taken ill Friday, December 21. Approximately 25 years ago Mr. Blake took a position with Whitney Bros. in this city. He continued with that firm until 1914, when with F. Bendel Tracy, he became one of the organizers of the Fort Hill Paper Co. Mr. Blake had been president of that company for practically seven years. He was a member of the Unitarian Parish Club and Highland Club of West Roxbury, the Norfolk Golf Club, Bedham, Mass., and the City Club of Boston. A wife, a son, Howard, Jr., and a daughter, Barbara, are living. A large delegation from the paper trade, including members of the Boston Paper Trade Association, attended the funeral on Friday.

Boston Paper Market Quiet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 31, 1928.—Seasonal dullness has continued in the paper market here, although some dealers say they have plenty to do. Values of fine papers are unchanged and are expected to remain steady. The kraft situation remains unsatisfactory after the cut.

The boxboard market is still in a chaotic condition. Mills are running busily, with enough orders for chip at $30 and filled news at $32.50 to keep them operating for thirty days. Some at least operated every day last week except the holiday, while under ordinary circumstances they would have closed for at least Monday, the day before Christmas. A number of mills have declined to accept any orders for chip on the $30 basis, but, as intimated, a considerable tonnage has been sold at that figure. Buyers, however, are obliged to wait, in many cases, for late shipment. It is said that some very low quality or the lowest quality of chip is being made now, and that in some instances, at least, manufacturers have now gone "back to original principles," in the material of which their product is composed. Light colored chip had been made for a while. For immediate shipment, buyers are obliged to pay higher prices, and some of them are doing it.

With the close of the year, users of old papers and rags are buying little, so that their inventories will show as small an amount on hand as possible. Prices are at practically the same levels.

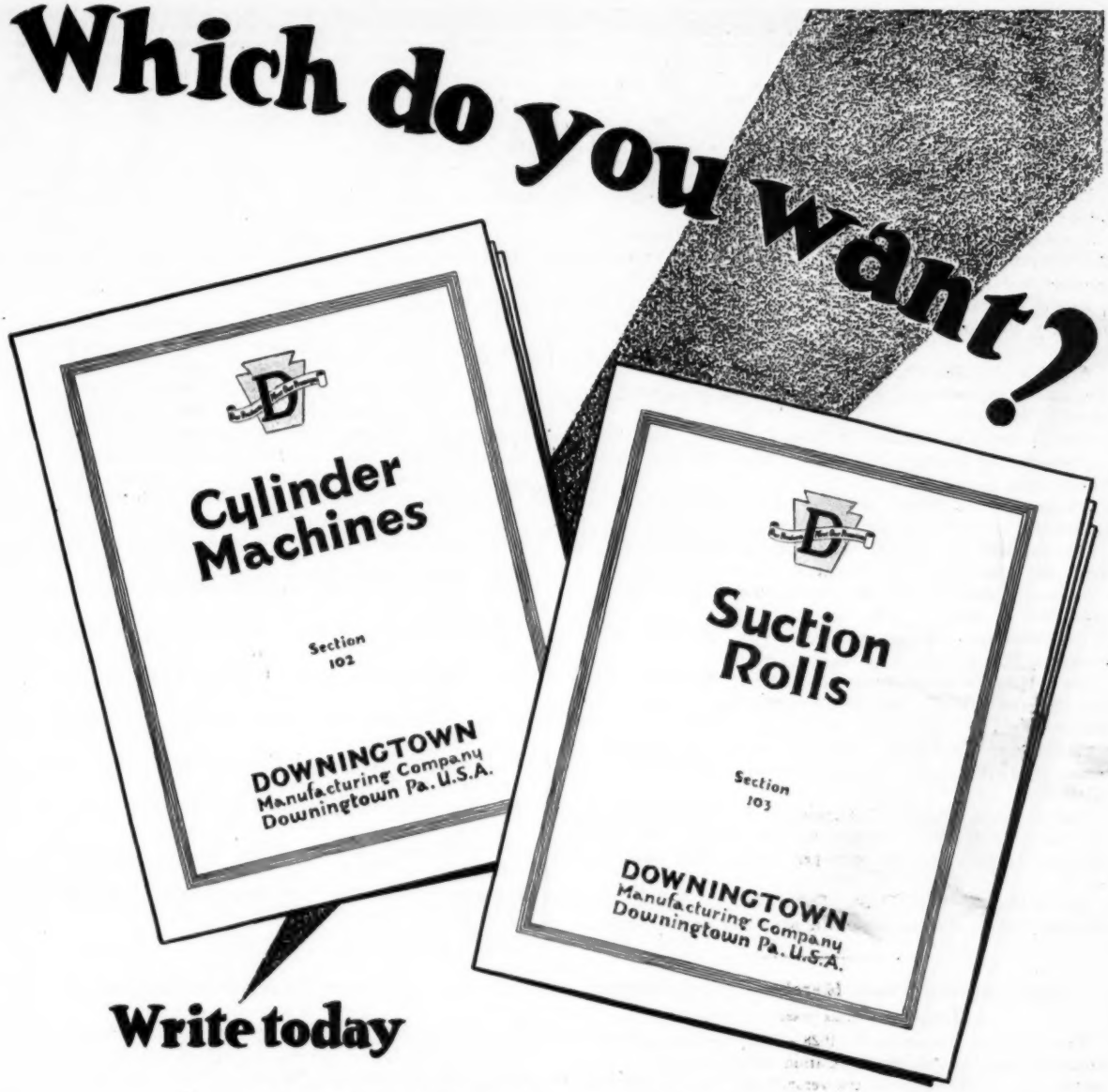
Asks Compensation for Loss of Fingers

CANTON, N. Y., December 31, 1928.—The case of Burl Barriger, of Norwood, against the Martin Pulp and Paper Company, of Norwood, and the American Mutual Insurance Company, occupied more time than any of the others brought up during the past week in compensation court here. Referee James P. Richardson, of Syracuse, presided. Mr. Barriger lost three fingers on his right hand in the Norwood plant of the paper company while making a spud, used in the operation of his machine. The carrier for the insurance company raised the question of the accident having occurred while the claimant was employed in the work which he was supposed to do, contending that when the spud was broken Barriger should have applied to some one in charge for another rather than leave his machine to make one. Claimant on the other hand said he was in the habit of making spuds when he had none. Several witnesses, a large number of whom were employees, were sworn and considerable testimony was taken. At the close the case was referred to Referee Richardson's desk and a decision will be given later. Attorney R. J. Heffernan appeared for Mr. Barriger.

To Those Who Contributed

The PAPER TRADE JOURNAL has been informed that the late Herman Lostfogel who generously and unselfishly collected contributions for the orphans of Karl Barsky, opened a trust fund for these children May 14, 1928. Under date of December 27, 1928, this trust fund has been taken over by the Chatham and Phoenix National Bank and Trust Company, to be carried by them for Esther Barsky and Rhoda Lea Barsky under the laws of the State of New York.

Which do you want?



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Trade Mark Department

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The following are trade mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

THREE STAR—No. 269,175. The American Crayon Co., Sandusky, Ohio. For chalk.

A red background within an inner circle, and the letters "B B"—No. 270,168. The Brown Bridge Mills, Inc., Troy, Ohio. For gummed and coated paper and cloth.

BROWN COMPANY—B. Co. FOUNDED 1852—No. 273,440. Brown Company, Portland, Me. For paper towels, kraft paper and bond paper.

AIRGRAM—No. 273,949. Walter T. Varney, San Francisco, Cal. For letterheads, envelopes, post cards and combined letterhead and envelope.

SERV-U-WEL—No. 274,826. William T. Madden, doing business as Serv-U-Wel Markets, Zanesville, Ohio. For toilet paper or tissue.

DRAGONIDE—No. 275,157. and rep. of two dragons on a scroll. Cromwell Paper Co., Chicago, Ill. For tympan paper.

DUO-SERVICE—No. 271,618. The National Towel Vendor Company, San Francisco, Cal. For paper towels.

TRANS-O-PAKE—No. 264,396. Transo Envelope Company, Chicago. For envelopes.

THE MERRIMAC PARTIPLATE—No. 273,199. Merrimac Chemical Company, Boston, Mass. For paper plates.

WILL HOLD GUMMED TAPE—No. 274,098. With picture of a cow boy with a lasso. Central Michigan Paper Company, Grand Rapids, Mich. For paper and cloth gummed tapes.

SECTION-ET—No. 273,931. Owens Manufacturing Company, Hoboken, N. J. For boxes, such as boxes with a plurality of compartments.

PLEATEX—No. 275,039. Hollingsworth & Vose Company, Boston, Mass. For paper in sheets or rolls suitable for designing, drafting, drawing, folders, envelopes, covers, tags, lamp shades, etc.

MEMRI-MINDER—No. 274,638. Eaton, Crane & Pike Company, Pittsfield, Mass. For memorandum pads and writing paper.

New England Paper Merchants to Celebrate

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 31, 1928.—The coming year the New England Paper Merchants Association will round out a quarter-century of existence and the anniversary is to be celebrated at the annual meeting, January 10, at the Harvard Club of Boston. The association was organized in May, 1904, with Thomas Cook, of the Cook-Vivian Company, and William F. McQuillen, of Storrs & Bement, as the prime movers. The object of the association, according to the articles of agreement, was to establish close business relations and cultivate a spirit of harmony among all the paper merchants of New England.

Mr. McQuillen was the first president, serving for two years, and William B. Livermore, of Tileston & Livermore, the first secretary, continuing in that office for three years. The first two years the meetings were held monthly at three o'clock for an hour or so in the private office of the Cook-Vivian Company, 183-195 Congress street, Boston. The members discussed trade matters, principally concerning white paper, because most of them were dealers in that commodity. Arthur M. Burr, however, at that time treasurer of the Andrews-Burr Paper Company, was one of the few in the manila paper business who was interested in the association. He was elected the second president of the organization and is now the oldest living ex-president. J. B. Forsyth, of Stone & Forsyth, a manila paper house, and A. G. Perkins, head of C. B. Botsford Co., one of the oldest wrapping paper houses, were also active. Frank Arnold, of the Arnold-Roberts Company, was the third president, and his partner, M. H. Warren, the second secretary. Both were active for many years in the work of the association. James Richard Carter of Carter, Rice & Co., was also a consistent supporter of the work of the association.

On the suggestion of Mr. Burr, after his election as president, the meetings were held in a private dining room at Young's Hotel, each one ordering a la carte. At the beginning of the fourth year, the meeting-place was changed to the Copley Square Hotel. After a number of years of gatherings there, the members met at the Hotel Victoria, during the presidency of J. B. Forsyth. Since that time the organization has met at various places, and of late years at the Harvard Club of Boston.

Mr. Burr was one of the most active in the association, and part of his work was to stimulate interest in it among dealers, both in Boston and New England as a whole. He says that one of the great values of the early days was not so much in the actual improvement in business methods and establishment of trade customs and ethics as in the men getting together and becoming acquainted and finding that they could work together. In later years there has been considerable development as an organization, especially in the relation of the members with the manufacturers.

Membership in the New England Paper Merchants Association means also membership in the National Paper Trade Association. Members go to meetings in various parts of the country where National body assembles. The present membership is 48 member-houses throughout New England.

The present officers of the association are as follows:

President, Matthew O. Byrne, Whitney Bros., Inc., Boston; First Vice-President, Arthur E. Ham, Arthur E. Ham & Sons, Boston; Second Vice-President, Robert M. Stone, Stone & Forsyth Company, Boston; Treasurer, Charles A. Young; Secretary, Floyd H. Blackman, D. F. Munroe Company, Boston; Auditor, A. H. Arnold, Providence Paper Company, Providence, R. I. Executive Committee—Fine Papers, George D. Allen, Knight, Allen & Clark, Inc., Boston; W. J. McLellan, Carter, Rice & Co. Corporation, Boston; Wrapping Papers, Leon Young, John S. Cheever Company, Boston; Walter Butler, Perkins & Butler Company, Worcester, Mass. The representatives to the National Paper Trade Association are W. B. Stevenson, Storrs & Bement Company, Boston, and A. W. Blackman, D. F. Munroe Company, Boston.

Copco Family Has Banquet

[FROM OUR REGULAR CORRESPONDENT]

COLUMBUS, Ohio, January 2, 1929.—At the annual "President's Dinner to the Copco Family," an annual banquet of The Central Ohio Paper Company in Columbus, thirty-three members of the organization were honored as having been with the organization for 25 years or more. This number represents approximately 16 per cent of the employees of the company.

The dinner was held at the Columbus Country Club on the evening of December 28, and was attended by approximately 200.

Heading the list of "veterans" was O. A. Miller, chairman of the board of the company and founder of the business 53 years ago. The present corporation dates from 1887. He has been active as the head of the organization from the beginning.

The dinner ended a two day sales convention of the "Copco" organization at which 70 salesmen and executives were present. They represented Columbus, Cleveland, Toledo, Detroit, Indianapolis, Pittsburgh, Akron, Dayton, Wheeling and Huntington.

Reports of the company showed 1928 to have been the biggest year from point of sales of any previous in the company's history, not excepting the war time period.

Norman E. Harrower, of Boston; Henry Atwater, of Reading, Pa.; A. E. Sutphin, of Cleveland; W. K. Gerbrick, of Menasha, Wis., and H. L. Vennell and P. M. Broomfield, of Philadelphia, were out of town speakers at the sales sessions.

Density!

THE PATERSON PARCHMENT COMPANY of Passaic, N. J., has always set a high standard on slitting and rewinding work. And for 20 years Langston Slitters have fully met this standard by *producing firm, tightly wound rolls with straight, dust-free edges.* With the Langston winding principle, plus refinements of design, tension may be adjusted to the exact degree best suited to the stock being run. You get a perfectly true roll on the Langston. It is capable of high speed with minimum upkeep. It will improve the quality of your product and lower costs. That is why so many mills are installing Langston Slitters.

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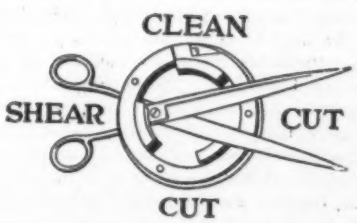

LANGSTON SLITTERS

New York Trade Jottings

Walter L. Hall, the well-known consulting forester, of Hot Springs, Ark., has been spending several days in New York City.

* * *

B. F. Avery, forester, of the Abitibi Power and Paper Company, was in New York last week attending the annual convention of the Society of American Foresters.

* * *

The Seaman Paper Company, of 200 Fifth avenue, New York, announces that Willard M. Pringle has been elected a vice-president. He will remain in charge of its Philadelphia office.

* * *

The New York offices of Mente & Co., dealers in bagging, have been discontinued and the company requests that all inquiries for the purchase of bags or burlap and other communications be directed to the main office in New Orleans, La.

* * *

It is announced that the business of Walter Braunstein, paper and paper mill representative, of 41 East 42nd street, New York, will be conducted from January 1, 1929, under the name of the Walter Braun Company, Inc. Walter Braun is president of the corporation.

* * *

Arthur Schroeder, manager of sales of the Pejepscot Paper Company, Inc., of 42 Broadway, New York, announces that effective January 1, R. A. Kleindienst will resign from the sales force of the company. He is leaving the paper business for another line of endeavor. In his place the Pejepscot Paper Company have engaged the services of Paul H. Bull.

* * *

The Twenty-Eighth Annual Meeting of the Society of American Foresters, held in New York last Friday and Saturday, was attended by 175 foresters from practically every section of the United States and Canada, and proved a huge success. The annual dinner was held in Keen's Chop House last Saturday night and no less than 136 participants spent a most enjoyable time. The unique menu was printed on Douglas Fir Plywood, contributed by the West Coast Lumbermen's Association, of Seattle, Wash. A timely personal message from the West Coast lumber industry to the foresters, signed by A. B. Greeley, secretary-manager of the association, was printed on the back of the wooden menu.

* * *

The New York office of the Brown Instrument Company is now located at Room 1502, Roebling Building, 117 Liberty street, removing from 50 Church street. This change was made necessary by the need of larger quarters to provide for the increased staff now attached to this district office. The popularity of the Brown Electric Flow Meter and growing demand for other Brown instruments for measuring, recording and controlling temperature, pressure, liquid level, and other industrial process factors is shown in the rapid increase of business received from the New York area. It is believed that this increase in the Brown Instrument Company staff, together with the better facilities afforded by a larger office will be of material benefit to the company's customers in this territory.

* * *

M. M. Elish & Co., Inc., of 29 Beekman street, New York, announces that they have been appointed sole distributors for the full line of white and colored gummed papers manufactured by the Brown-Bridge Mills, Inc., Troy, Ohio. A full and complete line of dextrine, fish glue mixture, and 100 per cent fish glue gummed papers, white and colors, will be carried in stock by M. M. Elish & Co., Inc., and a special service department has been installed to take care of special, roll, and holland gumming requirements. M. M. Elish & Co., Inc., are one of the pioneers in the gummed paper line, handling this class of papers for over thirty years.

Wrapping Paper Men Asked to Tariff Meeting

Henry W. Stokes, chairman of the American Paper and Pulp Association's Wrapping Paper Tariff Committee, has invited the wrapping paper industry to meet together in the Board Room of the American Paper and Pulp Association, at 10:30 a.m., Tuesday, January 8, for the purpose of discussing the tariff needs of the wrapping paper industry. It is expected that Wise, Whitney & Parker, who have been retained by the association's general tariff committee to supervise the industry's tariff revision activities, will attend this conference, as well as Warren B. Bullock, manager of the Import Committee of the Paper Industry, which is co-operating so effectively with the association in its tariff revision work.

It is probable that as the result of this conference representatives of the various organized wrapping paper groups will confer with Wise, Whitney & Parker for the preparation of briefs covering tariff protection for their grades of the industry, with the entire wrapping paper industry's tariff needs thus harmonized and included in the brief which will be presented by the American Paper and Pulp Association's General Tariff Committee or its Counsel before the Ways and Means Committee of the House at the hearings scheduled for February 13 and 14. It is understood that representatives of all mills making wrapping papers will be welcome at this meeting.

Paper Men Interested in Green Island Bank

[FROM OUR REGULAR CORRESPONDENT]

WATERVLIET, N. Y., December 22, 1928.—The Green Island Bank is the name of a new corporation chartered last week to do business in the former office building of the Manning Paper Company. A number of prominent paper manufacturers of this district are included in the board of directors. John A. Manning, head of the Manning Paper Company, is vice president and one of the principal promoters of the newly incorporated institution. The corporation was chartered with a capital of $100,000 and Samuel E. Aronowitz, prominent Albany attorney, has been selected to serve as president.

The new organization is located in the remodeled Manning Paper Company building on George and Clinton streets and is a stucco brick structure with interior furnishings of walnut. The offices of the Manning Paper Company formerly located in the structure were recently removed to a mammoth new office building in Watervliet. The new bank was opened for business on December 22.

To Make Meat Packaging Study

An investigation which will be of interest to all concerned with the merchandising of packaged goods has been undertaken by the University of Pittsburgh through its Bureau of Business Research. Consumer preferences for packaged meats will be studied in the Pittsburgh trade area, for the purpose of determining both the choice of the consumer for packaged as against bulk goods, and also the preferences for various types of containers, including paper, wood, metal and glass.

The survey will be made under the direction of Dr. John H. Cover, director of the bureau, and will have the co-operation of the Institute of Meat Packing of the University of Chicago. The study is being made because of the rapid development of packaging in the meat industry and the desire to establish a basis of consumer preferences for further developments, if possible, along this line.

The work is being financed through a grant made by The National Provisioner, Chicago, and is known as The National Provisioner Package Survey.

Index Number for Pulp and Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 2, 1929.—November wholesale price index number for paper and pulp was 88.8 compared with 89 for October and 91.3 for November of last year taking 1926 at 100 according to the Department of Commerce.

HEAT

—a valuable by-product from waste vapor!

In every manufacturing industry, the discovery of a by-product from wasted material is hailed as an achievement in economy.

The Briner Economizer

Licensed under patents of E. A. Briner and John E. Alexander

Ross-Grewin High Pressure Vapor Removal.

Ross Grinder Exhaust System.

Ross Machine Room Heating Systems.

Calender Cooling.

Felt Drying.

Trim Conveying.

Utilized Waste Vapor Will Save Your Steam!

Progressive paper mills are now providing needed heat for their fresh air supply from reclaimed heat units that had previously been wasted in expelled vapor. Here is waste utilized to the utmost.

Under prevailing conditions, can any mill continue to ignore this costly waste of heat—continue to pay for steam that is not needed? It is from such savings that margins will be maintained during the coming year.

Ross Heating and Ventilating Apparatus will effect the desired results and at comparatively moderate installation cost.

J. O. ROSS ENGINEERING CORPORATION

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Power Plant Section

Reducing Power Costs Through Unit Treatment

Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

Modernizing The Power Plant

Steam Superheaters and Fuel Economizers

The importance placed upon heat saving devices by the pulp and paper mills at the present time is so very marked that the manufacturers of such appliances have found it exceedingly difficult to keep in touch with the financial situation created, *i.e.*, with the economies effected through the use of such power plant accessories in paper mill service. Only a few years ago, it was quite generally held that the pulp and paper mills were interested only in such devices as could insure savings which would pay for the investment entailed in three or four years. Today, steam super-heaters and fuel economizers are considered absolutely necessary in the modern power plant. The situation, however, is really unchanged, inasmuch as these heat saving devices simply have demonstrated beyond question of doubt that they invariably pay for themselves within the allotted time. If the power plant is to be operated efficiently and the processes entailed in pulp and paper making conducted economically, the devices are essential.

One has but to note the experiences with superheater and economizers now quite common among the power plants serving the dual industries to satisfy oneself on this point. The citation of a few examples will suffice, such as those mentioned in the discussion. "Recuperation of Heat Losses By Steam Superheaters and Fuel Economizers", published in these columns September 1, 1927. There, figures were presented showing that at one mill fuel economizers are conserving from 10 to 15 per cent. of the fuel previously consumed, depending upon the severity with which the boiler plant is forced, and that in other plants, the yearly yield on the investment entailed for economizers is a matter of from 26 to over 60 per cent. It would be no difficult task to present facts and figures pertaining to numerous other installations in the paper making field which would serve to demonstrate even more forcibly the value of suitable heat saving devices, but a somewhat more general discussion, touching briefly upon the general types of heat saving devices now available, and, followed by concise descriptions of a few paper mill power plant applications will doubtless be more in order.

Advantages of Superheated Steam

The value of superheated steam has really been quite well appreciated even since the early days of steam power, but its applications in pulp and paper making activities, as to all other industrial processes, has been decidedly slow until recent years, for the simple reason that modern power plant equipment and supplies are essential for its effective utilization. Lubrication, for example, was a serious stumbling block to the use of high temperature steam until the development of the modern mineral oil lubricants. The advent of the steam turbine, running best on superheated steam, was also a pertinent factor in making possible the utilization of present day high pressure superheated steam. Then there were the many problems of suitable equipment design and the lack of satisfactory heat-resisting qualities in ordinary metals to be contended with. All these obstacles have been overcome to a greater or less extent, fortunately, so today it is quite feasible for a well designed power station to use high pressure steam superheated to a final temperature of 750 degrees Fahrenheit.

So far as increased engine efficiency through the use of superheated steam is concerned, by reduction in cylinder condensation and pressure loss through valves and fittings, the following table is quite illuminating, the steam superheated 100 degrees.

Type of Engine	*Steam saving*
Simple engine	18 to 20 per cent.
Compound engine	14 to 12 per cent.
Triple expansion engine	10 to 12 per cent.
Direct-acting pumps	20 to 30 per cent.

The greatly reduced quantity of water in the engine cylinders has the further advantage of permitting the lubricating oils to function much more effectively.

In steam turbine practice, the use of superheated steam has two outstanding advantages. In the first place, it carries more heat units per pound than does saturated steam and so accomplishes more work per pound, increasing the efficiency of the power unit corespondingly. In the second, the elimination of water in the steam is highly beneficial in several ways. It does away with a large part of the wear on the turbine blading, for moisture or entrained water carried along at the tremendous speeds developed within the turbine is strongly erosive in action. The presence of water in the steam is also objectionable since the very considerable friction it sets up at high speeds reduces the steam velocity and noticeably cuts down the power generated by the turbine.

A constant exhaust temperature for the steam leaving the turbine at all loads is also inducive to high turbine efficiency, necessitating the provision of approximately the highest suitable steam temperature over the entire range of operation. This, quite obviously, demands that the steam supplied the turbine, the entering steam, be sufficiently superheated to carry through all stages, exhausting in a dry saturated condition, or else still retaining some little superheat.

Where exhaust steam is used in process operations, as is quite general in pulp and paper making processes, the importance of superheating the steam, however, is frequently overlooked, on the supposition that no gain results from superheating if all the exhaust steam is utilized. This is a grievous mistake, for exhaust steam contains a comparatively large quantity of water unless the steam was initially superheated to a considerable extent. In fact, if the process requires large quantities of saturated steam, secured so far as possible from prime mover exhaust, superheated steam is highly desirable at the throttle in order that the exhaust may contain as little moisture as possible.

This is well exemplified in the steam supply to the digesters. A supply of steam carrying some little superheat is very desirable, for each pound of superheated steam carries more heat into the digester, the liquor is diluted more slowly and the process of cooking is correspondingly accelerated. Bubbles of superheated

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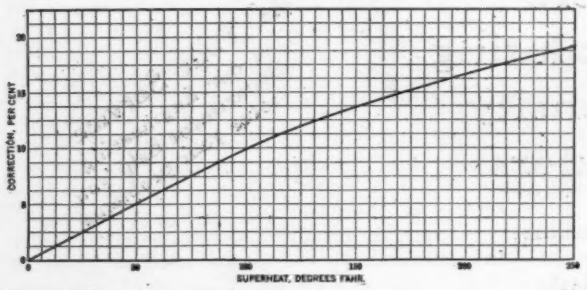
steam take longer to collapse than those of saturated steam, the steam retaining its gaseous form quite appreciably longer, speeding-up the cooking of the digester charge and increasing the agitation of the mass without excessive water dilution of the liquids.

Then, of course, much steam is of necessity used in equipment which is relatively far removed from the boiler house and sources of exhaust steam and which if it does not start in its journey well laden with stored, or reserve, heat will enter the dryers, etc. carrying a good deal of water. It will have lost in transit much of its most effective heat, *i.e.*, its latent heat, and will slow up process work, adding in no small measure to the cost of the process. Furthermore, the losses incident to supplying any heating device with wet, rather than dry, steam are accumulative and actually pyramid quite rapidly. This is due to the fact that loss of heat through radiation from pipe lines, fitting and valves is considerably greater when the inside of the pipes, etc. are wet than when the pipe and steam are both dry. The reason for this is that water is a much better conductor of heat than a dry gas. The presence of water in pipes, fittings and valves also raises the frictional resistance to the flow of the steam and increases the pressure accordingly.

In short, steam employed as a *conveyor* of heat is heavily burdened by the presence of water. Condensed steam is not only expensive, but it is much more costly to remove the water than it is to prevent its accumulation before the thermal properties of the steam are called upon for the discharge of useful and productive work.

General Types of Superheaters

The most familiar type of superheater is doubtless that of the convection class, consisting essentially of one or more loops of heating elements connected to an inlet and an outlet header, placed in the path of the hot gases from the grates. In water tube boilers, the superheater elements are customarily mounted in inter-deck locations above the first pass in horizontal water tube boilers or in back of the first bank in vertical water tube



Courtesy: Westinghouse Electric & Mfg. Co.

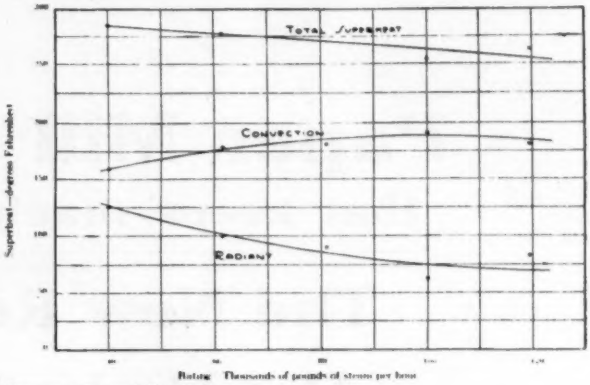
FIG. 1

Savings effected in water rate of steam turbines when superheated instead of saturated steam is employed.

boilers. The elements themselves are looped in such forms as best conform to the various tube and boiler designs, both water and fire tube, and are arranged so as to present their heat absorbing surface most effectively in the path of the hot gases. One manufacturer has so refined his standards as to furnish three distinctive varieties of superheater elements, those with deeply serrated contours to present a maximum of extended heating surface to the action of the hot gases, those with a corrugated contour to present a moderately extended heat absorbing surface and those with a plain, smooth contour where only a minimum of heat absorbing surface is required.

These considerations are all of very prime importance in establishing the efficiency of the superheater, etc., but are of interest chiefly in the design rather than in the use of the convection superheaters. They are mentioned simply to indicate how great is the progress which has been made in superheater development of this type and the fact that there are varieties of these efficient heat saving devices available for all makes and forms of boilers.

The second type of superheater is that of the radiant heat class, the elements of which in effect take the place of the furnace brick work. That is, they are mounted on the walls of the furnace, connected to an inlet and an outlet header, and serve the double purpose of providing a water cooled furnace wall and a superheater possessing great flexibility. They are particularly efficient at low rates of steaming, having been successfully in-



Courtesy: Foster Wheeler Corp.

FIG. 2

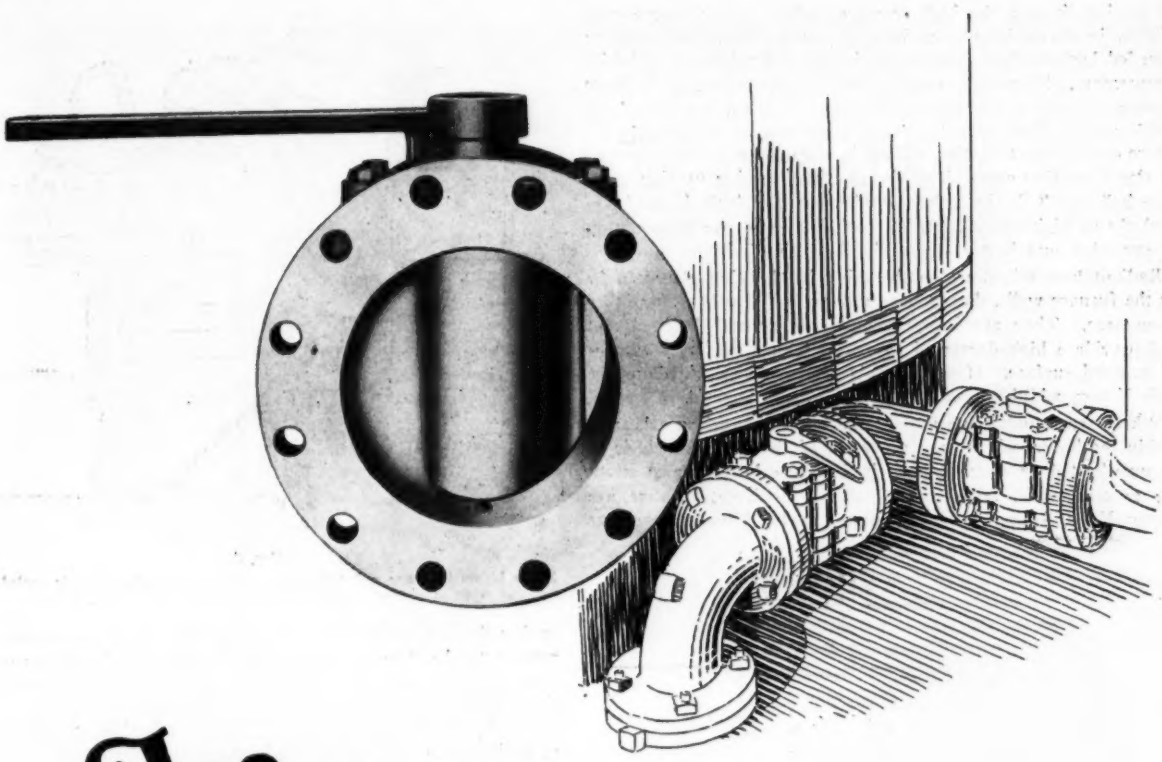
Test results showing constancy of superheat secured when combining convection and radiant heat superheaters.

stalled for superheats as low as 40 degrees, and in combination with convection superheaters are highly effective in securing relatively constant and high final steam temperatures. They are also extremely rugged and low in maintenance cost, one notable installation having been in continuous service at 1,300 pounds steam pressure and 750 degrees Fahrenheit since 1926 with virtually no repairs.

One of the most important uses of the radiant heat superheater is in connection with existing boilers where temperatures are inefficient for the economical operation of the present day steam turbine and where there is not sufficient room in the boiler itself for additional convection superheater surface. It takes up practically no room and the draft losses contracted at higher boiler ratings are considerably lower than the corresponding losses would be if additional superheat was secured through increased convection surface. It may be placed in any boiler having refractory walls and not only serves to protect a certain amount of more or less perishable brickwork, but relieves furnace conditions by the absorption of radiant heat and the introduction of a relatively cool, black area. Furnace capacity is increased, which enables the boiler to be operated at higher ratings.

Where high degrees of superheat are desired, where wide load fluctuations exist and where boiler space is limited, a combination of the convection and radiant heat superheaters connected in series represents advanced practice. Steam from the boiler first passes through a convection type superheater, is dried out thoroughly and moderately superheated. From the convection superheater outlet, the steam passes to and through a radiant heat type superheater where further heat is stored in the steam and the superheat raised to the desired temperature. An important characteristic of this arrangement is that the final temperature attained by the steam after passing through the two varieties of superheaters remains very nearly the same at all boiler ratings.

In high pressure, superheated steam turbine practice, it is found that worth while economy is affected by the introduction of a re-heat cycle, for which so-called reheater superheaters, of either the convection or radiant heat type, have been developed. The initial high pressure, superheated steam is expanded in its work



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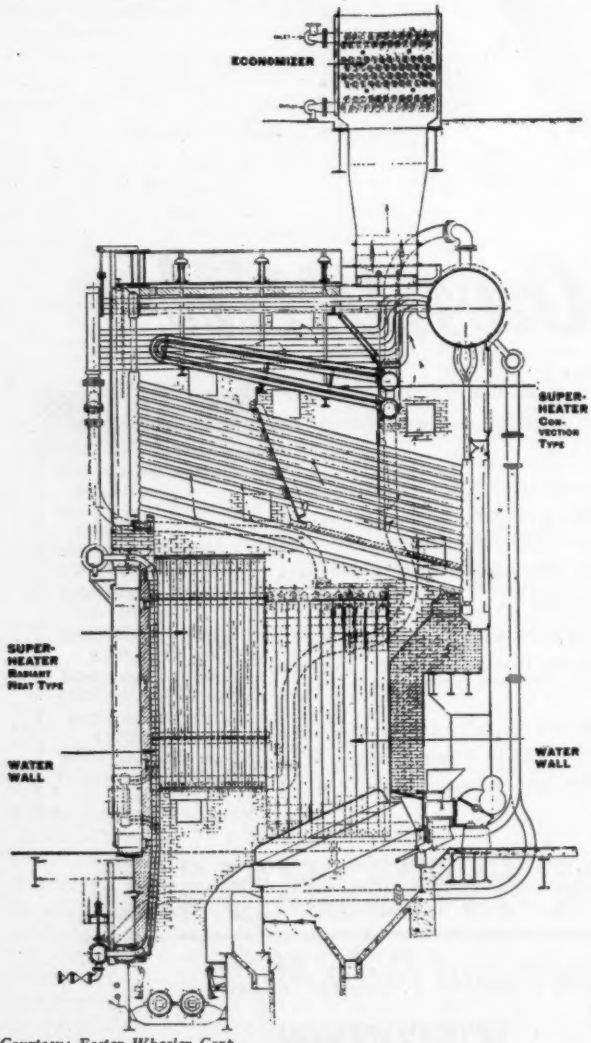
of passing through the high pressure turbine to a pressure only slightly in excess in that in the ordinary condensing unit and is then led back to the reheater superheater and raised to its initial temperature. Since reheater superheaters must present a large amount of heat reclaiming surface, approved practice when employing convection reheating is to make use of a single boiler where a great part of the surface is given over to the reheater, or else to employ convection reheaters in a number of high pressure boilers. This, in order to minimize the draft losses, particularly at high steaming rates, resulting from the presentation of excessive superheater surface in the path of the hot gases.

Radiant heat reheaters, on the other hand, being placed in or on the furnace walls, do not impose draft losses and possess other advantages. They are independent of boiler and baffle design and provide a high degree of superheat with a moderate amount of exposed surface. If water walls are employed, furthermore, little if any, additional water wall surface is required.

Where space limitations prevent the installation of superheaters within the boiler, where only a portion of the steam supply is to be superheated or where it is desired to superheat exhaust steam for process work, separately, or direct, fired superheaters are procurable, utilizing any of the ordinary fuels. Usually these heat



Courtesy: Foster Wheeler Corp.

FIG. 3

Modern, stokered fired boiler layout with side and rear water walls, convection and radiant heat superheaters, economizer and plate air heater (not shown).

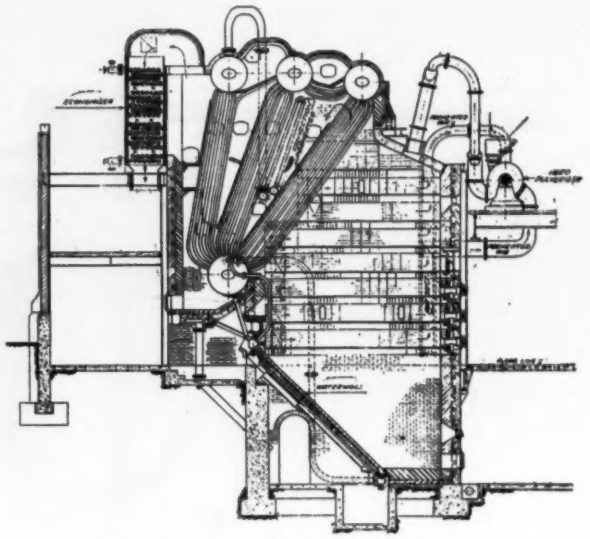


FIG. 4

Boiler layout of paper mill employing convection superheaters, air cooled side walls and water cooled bridge wall, fired on pulverized coal.

saving devices are constructed so that the steam passes countercurrent to the flow of gases of combustion, so developing maximum efficiency, and are quite suitable for installations where relatively high degrees of superheat are desired.

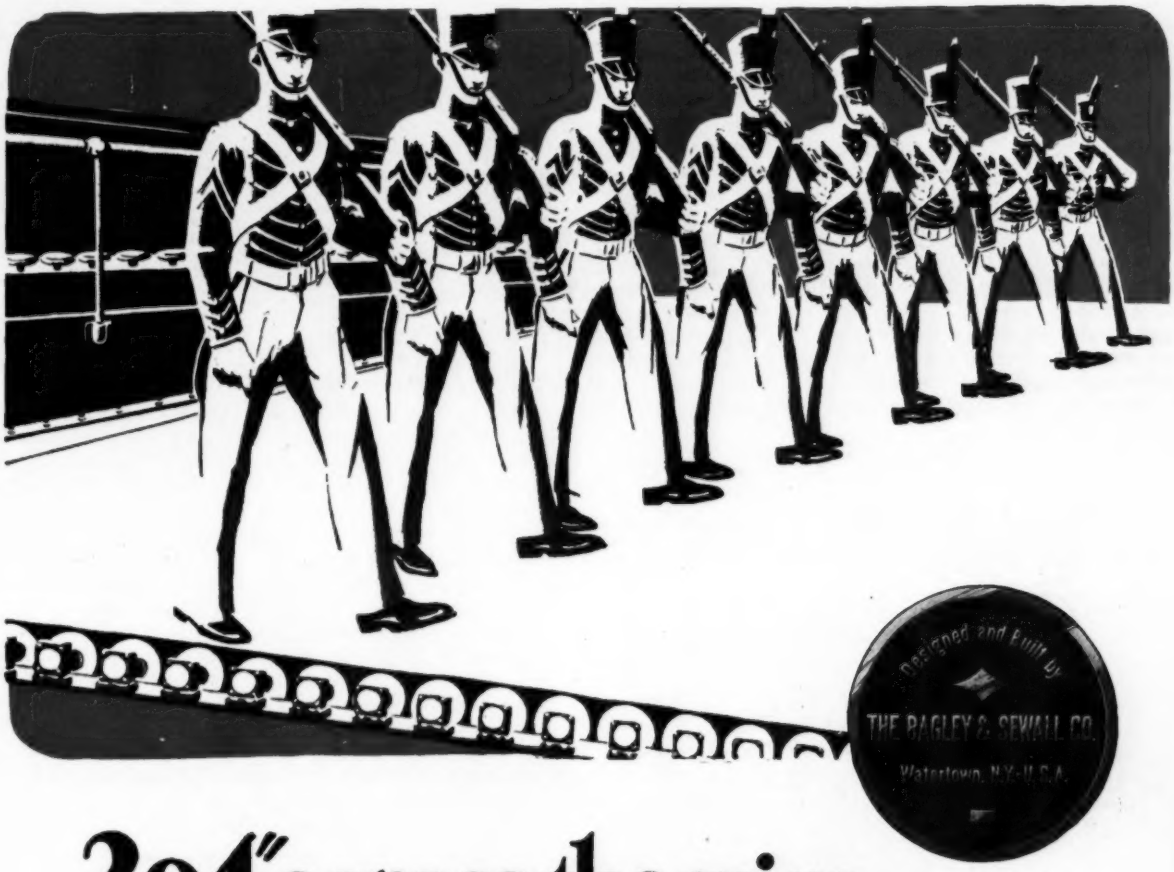
Finally, there are the waste heat type superheaters which are very similar to the familiar fuel economizers employed for heating the boiler feed water by reclamation of heat from the waste gases leaving the boiler furnace. The only difference is that in one case the heat saving device is utilized for superheating steam and in the other for raising the temperature of the feed water.

Economizers and Air Heaters

While the superheaters which have been briefly referred to will save and effectively utilize from 10 to 15 per cent of the heat generated in the boiler furnace, fuel economizers for heating boiler feed water and similar purposes are not far behind as heat saving devices, salvaging 10 per cent, or more of the total heat supply. Even this does not end the economies now effected in the modern power plant by heat saving devices, for after passing through the economizers a goodly share of the heat still remaining in the gases of combustion may be utilized to pre-heat the air supply to the combustion chamber of the boiler. With efficient heat reclaimers and the exercise of care to minimize the infiltration of air into the flues between boiler and economizer and to circumvent to the utmost radiation losses, overall boiler and grate efficiencies of close to 90 per cent can be realized.

So generally familiar are fuel economizers and so self-evident is the value of the air heater placed in the path of the hot gases escaping up the stack that no attempt need be made here to discuss these devices. Such heat savers were featured to some extent, however, in the discussion published September 1, 1927, and the accompanying diagrams of modern boiler installations will, consequently, provide an effective close-up perspective of what has really been accomplished in the development of heat saving devices during recent years and will serve, also, to show in some measure the favor with which they have been received by leaders in the paper making industries.

The first of these diagrams is the layout of a large modern water tube boiler fired by an underfeed stoker, with side and rear water walls, both convection and radiant heat superheaters and a fuel economizer. The latter, furthermore, discharges the flue gases into a plate type air heater, not shown in the illustration, which supplies high temperature air for combustion. The boiler is rated at 1,276 horsepower and the superheaters are designed to



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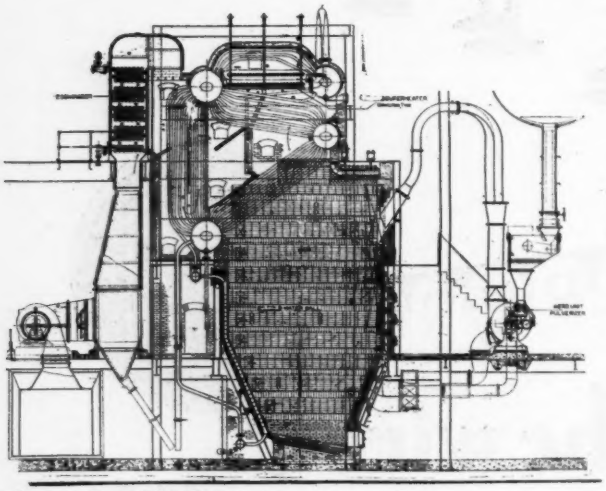
give 245 degrees superheat when the unit is producing 120,000 pounds of steam an hour at a pressure of 450 pounds per square inch. In practice, the two superheaters, the superheat developed by the convection superheater increasing slightly and that produced by the radiant heat superheater decreasing slowly as the boiler rating increased, compensate one another so admirably that the final temperature of the steam varied only from 690 degrees at 40,000 pounds of steam an hour to 714 degrees Fahrenheit at 125,000 pounds an hour. The economizer, which has 4,608 square feet of heat reclaiming surface, raises the temperature of 120,000 pounds of water an hour some 84 degrees.

The second boiler layout illustrated shows a highly efficient unit, with a convection type superheater and an economizer, in one of the prominent paper mill plants. This unit is provided with air cooled walls and a water cooled bridge wall, the air cooled walls providing preheated air for the operation of the pulverized fuel system with which this boiler is fired.

The third boiler layout shown, that at the Kapuskasing, Ont.,



Courtesy: Foster Wheeler Corp.

FIG. 5

Boiler arrangement at the Kapuskasing plant of the Spruce Falls Pulp & Paper Co., Ltd., fired on pulverized coal.

plant of the Spruce Falls Power & Paper Company, Ltd., is particularly interesting for the reason that coal is hauled such a long distance that the delivered price is so high that every possible heat unit must be utilized. It is said that this plant is not only an excellent sample of advanced practice in its compactness and efficiency, but that it produces steam at a minimum cost per pound, compared to other plants of the same size and operating under comparable conditions.

Each of the several units consists of a 1,035 horsepower boiler, with a somewhat special form of convection type superheater, made necessary by the width of the boilers and the need of ample clearance between the connecting headers and the boiler drums, and an economizer located immediately behind the boilers. The gases of combustion are received from the last pass of the boilers and are pulled down through the economizers by induced draft fans. The furnace walls are air and water cooled and the fuel as fired is pulverized. The following data give the efficiency for which the unit was designed at maximum normal rating.

Steam pressure per sq. in.	250 lbs.
Rating	333 per cent
Superheat	150 deg. F.
Water per hour	101,000 lbs.
Water into economizer	180 deg. F.
Water temperature rise	112 deg. F.
Water from economizer	292 deg. F.
Gas per hour	147,000 lbs.
Gas into economizer	666 deg. F.
Gas temperature drop	319 deg. F.
Gas from economizer	341 deg. F.
CO_2 gas content	14 per cent
Efficiency without economizer	76.2 per cent
Efficiency increase by economizer	8.5 per cent
Efficiency with economizer	84.7 per cent
Fuel saving by economizer	10.04 per cent

From these figures it is evident that while the economizer is credited with a fuel saving of somewhat over 10 per cent, the superheater as a heat saving device accomplished substantially the same. In other words, the superheater and economizer alone may be credited with almost a quarter of the steam generated at the plant.

I. P. Offers Class C Common Stock

The International Paper and Power Company is offering 1,500,000 shares of its Class C common stock to common stockholders of record at the close of business January 8, 1929. Each two shares of the common stock of the company—whether Class A, Class B, or Class C—will carry the right to subscribe at $10 a share to one share of the new issue of Class C common stock.

Dividends have been initiated on the Class A stock at the rate of $2.40 a year and the company expects to maintain them if the estimated progressive increase in earnings materializes.

Stock of the International Paper Company, of which less than 7 per cent is outstanding, does not have the subscription right, but this stock may be exchanged for that of the International Paper and Power Company which does carry the subscription right up to January 8, 1929.

Stockholders subscribing to the new stock may pay for it in full on or before January 31, 1929, or in three installments—$4.00 a share on January 31; $3.00 a share on April 30; and $3.14 a share on July 31; the 14 cents representing an interest charge.

In a letter to common stockholders, the company points out that while consolidated earnings will be materially affected by the reduction in the price of news print paper effective in the beginning of 1929, this reduction will be partially offset by several factors. It is expected that the company's mills will run at considerably less curtailment than in 1928. The newly built and newly purchased mills, such as those at Gatineau, Quebec, and Corner Brook, Newfoundland, are showing improved manufacturing efficiency. During 1928 several mills were built, remodeled or purchased and accordingly contributed to the earnings of the company only for a part of that year. This applies particularly to the Camden, Ark., and the Moss Point, Miss., kraft paper mills, and the Fort Edward, N. Y., mill.

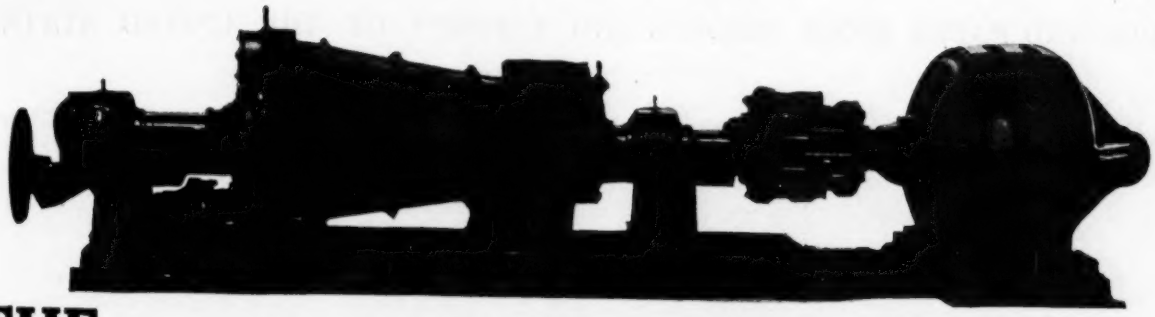
New Pulp Mill Under Consideration

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., December 28, 1928.—Although he did not announce the name of the concern for whom he is negotiating, Martin C. Welsh, attorney of Raymond, Wash., on December 23 asked the city commission for a guarantee of a supply of 3,000,000 gallons of water daily for a pulp mill to be built on the Siler mill site.

The commission has guaranteed the water supply, which is estimated as sufficient for a 100-ton plant, and it is understood that in addition to this, the interested company has options on other water rights in the vicinity, and that an engineer of the concern will check up on facilities soon.

Mr. Welsh divulged that the company plans to take over the Siler mill plant which is not operating now, except for the box factory, to operate the mill to cut hemlock, and to build a pulp plant in addition. The site has good waterfront facilities, and the mill power plant is sufficient for the needs of the company.



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(2) Bearings are enclosed in sealed housings that prevent the bearing troubles generally experienced when bearings are mounted directly on the shaft.

(3) Bearings are NOT mounted directly on the shaft.

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PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending October 31, and for the Ten Months Ending October 31, 1928, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER

	October				Ten Months Ending October 31			
	1927		1928		1927		1928	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and Manufactures (total)	.....	$13,076,039	.....	$14,370,483	.....	$121,891,108	.....	$127,778,694
Printing paper—								
Standard news print...lbs...free	350,968,012	11,633,759	400,724,367	12,734,950	3,235,542,262	106,956,881	3,495,448,711	113,548,374
Finland ...lbs.	6,113,916	171,909	8,587,265	217,910	53,044,878	1,500,116	62,267,601	1,618,387
Germany ...lbs.	1,613,560	49,851	2,173,762	56,692	11,912,933	375,562	15,364,787	415,010
Norway ...lbs.	510,360	13,836	3,016,633	99,225	26,108,865	704,316	16,805,532	452,245
Sweden ...lbs.	9,082,823	251,032	12,056,600	301,617	110,820,294	3,176,684	89,394,893	2,365,916
Canada ...lbs.	323,366,954	10,803,017	349,303,477	11,299,773	2,907,521,773	97,072,823	3,157,604,400	103,838,453
Newfoundland and Salvador...lbs.	10,280,399	344,114	25,568,550	759,174	125,045,670	4,093,098	153,304,916	4,837,765
Other countries ...lbs.	.....	.....	18,080	559	1,087,849	34,282	706,582	20,598
All other, n. e. s...lbs...dut.	890,109	43,441	545,951	25,061	8,832,888	436,811	6,301,167	294,255
Grease-proof and waterproof papers...lbs...dut.	51,104	13,235	109,068	19,127	1,349,260	221,183	1,066,495	195,782
Kraft wrapping paper...lbs...dut.	1,074,115	42,910	1,738,884	73,778	9,071,008	387,149	8,893,753	381,030
All other wrapping paper...lbs...dut.	3,477,412	62,037	1,190,311	33,423	7,787,580	225,396	14,092,149	334,607
Writing, letter, drawing, etc., papers...lbs...dut.	297,847	89,530	296,440	92,324	2,895,409	743,633	2,577,499	677,407
Surface-coated paper ...lbs...dut.	212,918	83,837	232,232	113,402	1,920,365	767,180	1,975,006	932,814
Tissue, copying, etc., papers...lbs...dut.	246,014	118,585	423,156	202,322	2,542,606	1,421,052	2,917,680	1,667,100
Paper boards, n. e. s.—								
Pulp boards in rolls...lbs...dut.	4,605,282	106,906	5,507,964	118,436	49,742,330	1,190,464	46,005,190	1,003,590
Paper boards, pulp board, and card board ...lbs...dut.	}		{1,688,768	53,887	}		{16,904,778	381,791
Leather board, tarr, and wall board...lbs...dut.	} 2,878,095	63,318	{ 140,392	3,420	}	724,978	{ 751,771	20,995
Cigarette paper, cigarette books, and covers ...lbs...dut.	1,019,098	293,645	1,180,726	321,865	12,954,619	3,808,550	9,540,675	2,586,384
Hanging paper (wall paper)...lbs...dut.	68,285	30,637	82,851	36,089	1,812,347	496,724	1,656,479	542,809
Duplex decalcomania paper, not printed...lbs...free	72,105	15,516	68,388	16,010	610,323	137,596	595,684	134,277
Paper boxes ...lbs...dut.	227,996	141,204	232,495	160,776	1,997,391	1,138,323	2,492,323	1,519,716
Pulp or papier mâché and manufactures, n. e. s. ...dut.	.....	21,555	.....	37,091	.....	287,975	.....	365,644
All other paper and manufactures...dut.	.....	315,924	.....	328,522	.....	2,947,213	.....	3,192,119

WOOD PULP

Mechanically ground wood pulp...tons...free	18,920	507,690	21,325	539,571	171,710	4,787,038	180,715	4,430,000
Sulphite wood pulp...tons	84,929	5,201,677	94,159	5,522,357	739,007	47,510,611	769,360	45,343,000
Unbleached ...tons...free	61,775	3,389,881	66,616	3,457,347	477,369	27,052,382	519,249	26,397,000
Bleached ...tons...free	23,154	1,811,796	27,543	2,065,010	261,638	20,458,229	250,111	18,945,000
Finland ...tons	4,503	220,185	8,187	360,012	60,214	3,139,989	80,659	3,515,000
Germany ...tons	2,101	144,646	6,824	428,746	40,614	2,903,478	51,753	3,434,000
Norway ...tons	5,303	396,926	6,453	511,528	57,077	4,303,502	52,501	3,621,000
Sweden ...tons	39,620	2,322,299	38,440	2,109,508	266,070	16,130,425	258,273	14,180,000
Canada ...tons	30,295	1,934,925	31,809	1,991,173	285,850	19,253,674	294,235	18,834,000
Other countries ...tons	3,107	182,696	2,446	121,390	29,182	1,779,543	31,939	1,757,000
Sulphate wood pulp, unbleached (kraft pulp) ...tons...free	33,336	2,053,590	35,103	1,911,677	264,095	16,272,424	287,859	16,082,000
Finland ...tons	2,109	97,122	2,343	109,909	11,168	588,113	21,615	962,000
Norway ...tons	263	14,038	1,221	67,857	8,443	475,953	10,541	554,000
Sweden ...tons	16,878	961,907	19,190	970,748	128,695	7,668,709	138,361	7,240,000
Canada ...tons	14,086	980,523	11,943	743,022	114,872	7,482,688	114,397	7,191,000
Other countries ...tons	.....	.....	406	20,141	917	56,961	2,945	133,000
Sulphate wood pulp, bleached...tons...free	637	40,751	3,338	197,926	9,996	653,745	12,040	740,000
Other pulp ...tons...free	777	42,235	536	41,233	2,056	168,409	5,743	387,000

CRUDE PAPER STOCK

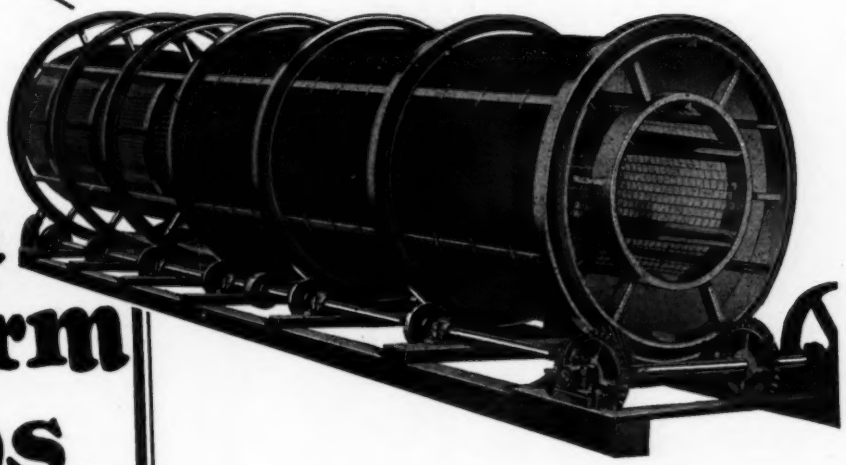
Rags for paper stock...lbs...free	32,644,799	607,924	38,570,770	752,020	311,956,745	6,308,775	372,106,029	6,855,282
Waste bagging, waste paper, etc...lbs...free	11,715,078	183,046	13,493,879	180,301	87,359,889	1,169,894	127,613,190	1,712,110
Old rope and all other paper stock...lbs...free	7,860,139	175,100	5,425,830	195,273	55,891,517	1,665,482	51,220,428	1,569,205

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS

Colors, dyes, stains, color acids, and color bases, n. e. s. ...lbs...dut.	483,925	509,320	542,908	631,700	4,580,869	5,097,163	5,013,914	5,551,414
Belgium ...lbs.	6,314	6,994	4,919	9,844	146,853	204,683	99,661	121,322
France ...lbs.	12,194	14,753	3,221	3,885	146,066	168,933	60,201	71,632
Germany ...lbs.	263,368	272,877	315,584	345,944	2,734,812	2,889,064	3,206,147	3,369,560
Italy ...lbs.	14,825	14,429	3,469	2,540	85,800	99,442	53,838	50,413
Switzerland ...lbs.	174,575	184,370	195,531	248,619	1,252,851	1,525,215	1,350,538	1,668,063
United Kingdom ...lbs.	8,110	8,657	4,661	5,119	136,463	137,854	87,639	82,425
Other countries ...lbs.	4,539	7,240	15,523	15,749	78,024	71,972	155,890	187,999
Casein or lactarene...lbs...dut.	892,930	123,553	1,740,539	218,867	21,600,241	2,761,122	25,510,107	3,295,043
Kaolin, china, and paper clay...tons...dut.	23,877	214,542	18,535	206,742	252,655	2,453,484	220,143	2,331,983

(Continued on page 56)

for clean uniform chips



... use this Carthage Chip Screen

CARTHAGE Rotary Chip Screens produce a clean, uniform chip, free from knots, dirt, slivers, sawdust and large chips.

They have greater screening area per square foot of floor space, hence greater efficiency. Carthage Chip Screens are smooth-running — no jerks or vibrations—no end thrust.

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Barkers
Chippers
Chip Screens
Chip Crushers
Wood Splitters
Pulp Grinders
Pulp Shredders
Wet Machines
Cylinder Molds
Wood Washers
Digester Blow Valves
Pumps
Quick Opening Gate Valve
Iron, Brass and Bronze Castings
Pope Refiners and Brushing Engines
Flat Screens
Smith Dryer Joints

Carthage Machine Company

Manufacturers of Pulp and Paper Mill Machinery

Carthage, N. Y. Belleville, Ont., Can.

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(Continued from page 54)

EXPORTS—PAPER

		October				Ten Months Ending October 31			
		1927		1928		1927		1928	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and Manufactures (total)		.....	$2,281,670	.....	$2,707,479	.....	$22,367,917	.....	$25,349,458
Printing paper—									
News print paper	lbs.	1,313,845	65,281	2,660,536	100,385	21,894,060	1,043,285	18,650,187	712,225
Canada	lbs.	295,186	18,355	3,990	170	2,810,914	175,950	168,385	6,416
Central America	lbs.	36,722	1,492	111,185	3,805	587,464	30,873	947,820	33,297
Cuba	lbs.	63,511	2,530	201,647	8,182	4,132,267	191,404	3,214,314	119,079
South America	lbs.	103,339	4,197	652,862	25,741	5,390,808	233,594	4,701,552	180,020
China, Hong Kong, and Kwantung	lbs.	.....	.....	468,420	17,615	335,824	20,629	1,669,895	63,721
Philippine Islands	lbs.	652,812	28,278	828,191	30,342	6,608,049	274,005	6,645,790	260,310
Other countries	lbs.	162,275	10,429	394,241	14,526	2,028,734	116,830	1,304,431	49,382
Book paper, not coated	lbs.	1,315,767	113,231	1,938,507	147,504	13,300,512	1,153,381	19,659,173	1,453,051
Europe	lbs.	11,970	1,493	36,445	3,572	1,089,681	97,774	420,146	43,785
Canada	lbs.	569,966	42,438	427,048	28,101	3,357,506	267,863	7,271,967	438,722
Mexico	lbs.	35,299	3,741	33,821	33,358	465,611	48,944	386,504	45,497
Cuba	lbs.	161,726	13,703	392,714	27,389	2,208,842	188,687	3,874,704	284,810
Argentina	lbs.	22,185	2,466	1,108	131	714,916	58,042	508,828	47,068
Other South America	lbs.	131,493	14,155	184,109	13,426	1,598,422	138,297	1,050,208	88,609
China, Hong Kong, and Kwantung	lbs.	13,027	1,313	154,370	9,925	380,295	42,412	1,707,240	138,213
Philippine Islands	lbs.	140,098	11,439	237,112	16,006	1,734,979	134,578	2,030,360	136,134
Australia	lbs.	95,338	11,030	194,856	24,243	730,148	78,205	851,479	102,502
Other countries	lbs.	134,665	11,453	276,924	21,353	1,022,202	98,559	1,557,737	127,711
Cover paper	lbs.	118,833	20,497	146,646	26,807	1,354,131	235,689	1,676,226	283,431
Grease-proof and waterproof paper	lbs.	290,789	32,523	388,557	58,597	2,329,747	329,325	2,673,658	404,338
Wrapping paper	lbs.	3,050,531	226,626	3,324,973	221,986	25,277,790	1,831,567	29,465,154	2,091,435
Surface-coated paper	lbs.	429,555	66,198	1,165,690	107,998	5,107,588	649,749	8,909,110	924,501
Tissue and crepe paper	lbs.	433,257	105,982	372,159	89,180	3,887,475	874,863	4,296,779	934,167
Toilet paper	lbs.	424,660	49,386	727,543	79,525	4,431,205	544,329	5,376,548	576,863
Paper towels and napkins	lbs.	185,778	28,528	297,875	37,487	1,982,584	276,400	2,550,382	325,948
Box board	lbs.	3,340,157	98,690	5,594,124	145,652	37,105,597	1,140,213	43,407,308	1,205,205
Bristols and bristol board	lbs.	104,175	11,730	157,332	17,279	1,597,805	149,591	1,591,276	179,495
Other paper board and straw board	lbs.	2,826,533	130,709	3,346,994	164,516	33,693,718	1,819,316	33,886,994	1,631,382
Sheathing and building paper	lbs.	1,022,157	41,222	1,236,605	45,380	10,546,008	419,448	11,288,808	420,191
Wall board of paper or pulp	sq. ft.	4,107,853	136,022	6,283,422	214,967	39,470,292	1,288,795	47,192,195	1,593,549
Blotting paper	lbs.	246,181	28,396	224,816	27,959	2,835,510	322,285	3,194,489	366,496
Filing folders, index cards, and other office forms	lbs.	136,505	33,117	118,241	46,038	895,244	256,051	1,266,879	429,961
Papeteries (fancy writing paper)	lbs.	100,330	24,156	96,058	28,480	611,195	158,304	648,338	167,346
Other writing paper	lbs.	960,813	132,613	2,470,027	231,475	10,203,076	1,512,387	20,176,466	2,238,801
Paper hangings (wall paper)	yds.	4,065,433	65,151	2,221,751	43,284	23,973,737	507,072	29,811,132	557,353
Paper bags	lbs.	585,863	53,737	764,256	65,481	9,544,984	821,641	7,142,285	639,029
Boxes and cartons	lbs.	2,131,469	144,652	2,485,639	176,178	19,776,948	1,331,151	22,603,745	1,521,107
Envelopes	lbs.	199,279	32,978	227,291	37,175	2,099,482	352,760	2,039,364	332,511
Vulcanized fiber sheets, strips, rods, and tubes	lbs.	259,477	77,156	407,017	105,196	3,550,928	1,057,554	6,349,881	1,406,209
Manufactures of vulcanized and indurated fiber	lbs.	55,961	16,952	16,424	5,786	435,252	127,886	416,717	123,279
Cash-register and adding-machine paper	lbs.	269,769	26,857	414,275	45,227	1,784,372	179,982	2,888,966	298,796
Other paper and paper products	.....	.....	519,280	.....	437,937	.....	3,984,893	.....	4,532,789

WOOD PULP AND PAPER STOCK

Sulphite wood pulp	tons	2,573	114,422	1,643	94,936	18,363	1,007,217	17,442	981,823
Soda wood pulp	tons	148	12,385	193	14,057	1,688	148,036	1,996	157,244
Other wood pulp	tons	153	8,698	338	11,103	2,064	81,534	2,830	164,386
Rags and other paper stock	lbs.	18,797,968	282,760	17,981,328	240,866	180,471,396	2,735,644	195,870,487	3,597,236

PAPER AND PULP MILL MACHINERY

Paper and pulp mill machinery	lbs.	1,828,575	356,423	1,180,660	326,166	16,804,716	3,222,199	12,319,767	2,570,480

Carter, Rice Get-Together Meeting

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 24, 1928.—A get-together meeting and dinner of the key men and the sales forces of the Carter, Rice Company Corporation and the Charles A. Esty Paper Company (the latter recently merged with the Carter, Rice Company) was held at the University Club Friday evening, with about 75 present. President Hubert L. Carter was in the chair. The keynote of the meeting was cooperation. This meeting was the first opportunity that Charles A. Esty, the new managing director, had of officially meeting the personnel of the new corporation.

Mr. Esty, the first speaker, earnestly outlined the opportunities of the new company. The enthusiasm with which his remarks were received must have been most gratifying to him as a pledge of the loyal support which the entire personnel promised him.

W. L. Carter, vice president of the company, spoke on "The Value of Organization in Modern Business." Mr. Carter pointed out that there was just as much danger in too much organization as too little, and that when all was said and done the strength of any organization was measured by the human effort of the individuals in it and not by any scheme or system. He asked for the cooperation of every one in the various changes that were being made, assuring them that cooperation for the company as a whole was the greatest force in business.

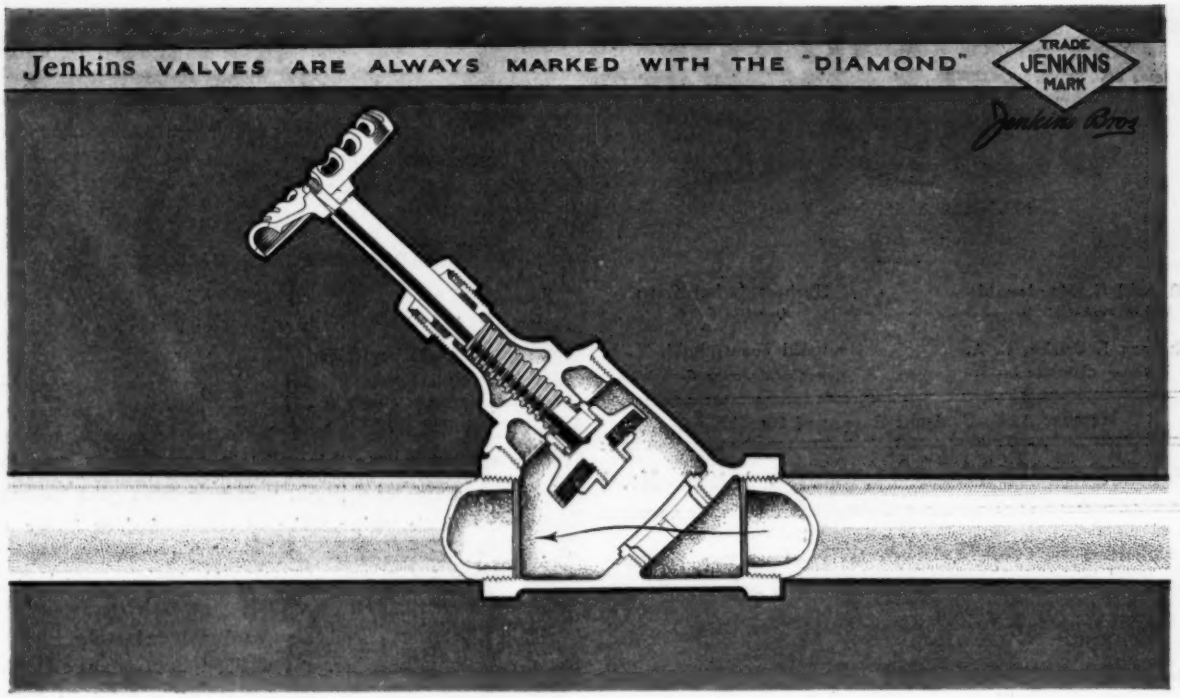
Frank H. Winter, sales manager, spoke about the duties he had before him in laying out the selling activities of the new organization, recognizing that while the sale itself was made by the salesman, it was the responsibility of a good sales manager to so operate and organize his sales force that each and every salesman should have the widest opportunity for increasing his business.

The last speaker was Edward D. Bement, a director of the new company. His subject was "Satisfied Customers." Mr. Bement pointed out in a very striking manner that no matter how good your organization, your facilities for doing business or your financial strength, you could not be successful unless your endeavors rested squarely on the foundation of satisfied customers.

President Carter brought the meeting to a close in a few remarks, emphasizing the points brought out by the speakers, which would ensure not only the prosperity of the new company, but also the responsibility which rested on them all of rendering service to the trade at large.

McKenzie Paper Co. Chartered

LANSING, Mich., December 24, 1928.—The McKenzie Paper Company, wholesale paper and twine merchants, of Marshall, Mich., has been incorporated at Lansing under the laws of the State of Michigan with a capital stock of $50,000. The officers of the corporation are: Robert P. McKenzie, president and treasurer, who will be in active charge of the business; Frank R. Moses, vice president, and Glenn E. Grant, secretary. The business will be strictly wholesale and the usual general lines will be carried in stock.



Sectional View, Fig. 124, Jenkins Standard Bronze Y or Blow-off, Screwed

In the thickest of it

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You can be sure of an unrestricted passage when the valve is opened, as the flow is practically in line with the pipe. You can be sure of tight closing, as a Jenkins resilient disc affords leak-proof contact at the seat. Since the seat ring as well as the disc is renewable, extra service is assured.

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PAPER TRADE JOURNAL
ESTABLISHED 1872

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COMING EVENTS

Fifty-second Anniversary of the American Paper and Pulp Association. Convention and Meeting of Affiliated Associations. Waldorf-Astoria Hotel, February 18-21. Annual Meeting, Thursday, February 21. Annual Banquet, Grand Ball Room, Thursday, February 21.

National Paper Trade Association of the United States. Convention, Waldorf-Astoria Hotel, February 18-20.

Technical Association of the Pulp and Paper Industry. Convention, Waldorf-Astoria Hotel, February 18-21. Annual Banquet, Hotel Commodore, Wednesday, February 20.

Salesmen's Association of the Paper Industry. Annual Meeting, Waldorf-Astoria Hotel, Tuesday, February 19. Luncheon, Tuesday February 19.

New York Association of Dealers in Paper Mill Supplies. Annual Banquet, Hotel Commodore, Wednesday, February 20.

Canadian Pulp and Paper Association. Convention, Ritz-Carlton Hotel, Montreal, January 23-25. Annual Banquet, Friday, January 25.

A UNITED FRONT ON THE TARIFF

As may be observed from an article printed elsewhere in this issue of the PAPER TRADE JOURNAL, the American Paper and Pulp Association is approaching with commendable energy and intelligence the matter of securing adequate protection for the paper industry in the approaching tariff revision.

The Tariff Committee of the Association has stated concisely just what it will endeavor to do and has expressed itself as pleased to discuss its decisions with any responsible person who may not be in sympathy with the stand it has taken. This is a good policy as, obviously, it is preferable to straighten out misunderstandings now and not allow them to complicate matters at a more crucial point in the proceedings.

In connection with the tariff revision it is rumored that there is some sentiment in certain directions for a tariff on news print. It was decidedly wrong ever to take the duty off of this variety of paper. This was accomplished, however, during the Taft reciprocity fiasco in 1911; through the influence of the daily press, abetted, we regret to state, by some of the large newspapers who were strong for protection on other items, and, it is fair, to assume that because of this same powerful, selfish influence, the chances for getting a duty put on news print now is so slight as to make any effort in this direction not worth while. It is to be regretted that this is the case, but it is a fact that must be squarely faced in any proposition having to do with a duty on news print.

There is probably nothing of greater moment before the paper industry today than the necessity of securing adequate protection in the pending tariff revision, and the association is to be congratulated on its efforts to present the united front of the industry in this important matter.

The PAPER TRADE JOURNAL earnestly suggests that all branches of the industry cooperate with the association in this work and thus insure an harmonious and effective presentation of the tariff needs of the industry before the House and Senate Committee which will write the new tariff law.

PAPER EXPORTS INCREASE

Exports of paper and paper products from the United States during October show a rather substantial increase in value in comparison with September of this year and October, 1927, according to the Paper Division of the Department of Commerce.

Shipments of book paper and wrapping paper increased to some extent as compared with the preceding month's, and these two items also show a substantial increase over October, 1927. There was a rise of 1,456,856 pounds in news print shipments compared with September, and an increase of about 10 per cent in exports of this item in October of last year. Export shipments of box board show a considerable increase over both the preceding month and October, 1927; a small decrease was registered in shipments of other paper board and straw board as compared with September, and a slight increase over October, 1927. Exports of writing paper continue to show an upward trend, October's shipments exceeding September's by about 515,077 pounds and those of October, 1927, by about 1,509,214 pounds.

Shipments of the finer papers and paper specialties showed a slight increase over September. The same applies to these items for October, 1927, with the exception of papeteries, tissue and crepe paper and filing folders, index cards, and other office forms. Exports of boxes and cartons were slightly smaller than during September and somewhat larger than October, 1927.

Exports of paper and paper products during October were valued at $2,707,479, an increase of $608,669 over September, and of $425,809 over October, 1927.

Imports of paper and paper products into the United States during October 1928 amounted to $14,370,483, as compared with $11,890,203 in September, and $13,076,039 in October, 1927.

Imports of standard news print show an increase of 71,428,110 pounds over September and an increase of 49,756,355 pounds over October, 1927. Incoming shipments of other paper and paper products show a slight decrease in value as compared with September and a very small increase as compared with October, 1927.

Total paper and board imports during October were valued at $14,370,483, of which $12,734,950 represented 400,724,367 pounds of news print paper and $328,522 other paper and board receipts.

Statistics covering receipts of paper base stocks in comparison with September figures show a slight decrease in the volume of pulpwood receipts and a slight increase in the receipts of old rope and all other paper stock and waste bagging, waste paper, etc. Rags for paper stock show a slight decrease as compared with the preceding month. Incoming shipments of wood pulp show a tonnage of 154,461, as compared with 131,556 tons in September of this year and 138,599 tons in October, 1927. The total value of paper base stocks during October is given as $10,532,474, as against $10,192,816 in September, and $9,851,185 in October, 1927.

Canadian Paper Exports Decrease

According to the report issued by the Canadian Pulp and Paper Association, the exports of pulp and paper from Canada in November were valued at $16,867,529, which was a decrease of $1,472,490 from the previous month but $365,866 greater than in November, 1927.

November wood pulp exports were valued at $3,856,257 and exports of paper at $13,011,272, as compared with $4,232,557 and $14,107,462, respectively, in October.

Details for the various grades of pulp and paper for November, 1928, and the corresponding month of 1927 are as follows:

	November, 1928		November, 1927	
PULP:	Tons	$	Tons	$
Mechanical	25,318	691,927	24,123	686,295
Sulphite bleached	18,614	1,451,431	21,395	1,705,417
Sulphite unbleached	18,312	902,562	16,983	859,723
Sulphate	13,132	763,415	14,313	845,847
Screenings	2,349	46,922	2,384	47,684
	77,725	3,856,257	79,198	4,144,966
PAPER:				
News print	196,137	12,422,625	179,969	11,771,491
Wrapping	1,331	148,930	1,068	116,200
Book (cwts.)	9,998	80,459	8,767	65,782
Writing (cwts.)	17	409	2,556	20,168
All other	.....	358,849	.....	383,056
	.....	13,011,272	.....	12,356,697

For the first eleven months of the year there was an increase of $13,479,625 in the value of wood pulp and paper exports, the total being $174,756,988, as compared with $161,277,363 in the eleven months of 1927.

Wood pulp exports for this year declined $1,671,248, the total being $41,512,147 as against $43,183,395 in the eleven months last year.

Exports of paper showed an increase of $15,150,873, the total for eleven months of the current year being $133,244,841 as compared with $118,093,968 in the eleven months of 1927.

Quantities and value for the eleven months are as follows:

	Eleven Months, 1928		Eleven Months, 1927	
PULP:	Tons	$	Tons	$
Mechanical	183,690	5,010,477	240,558	7,194,336
Sulphite bleached	229,683	17,441,668	218,362	16,976,257
Sulphite unbleached	194,409	9,748,257	175,264	9,401,191
Sulphate	148,416	8,745,192	154,825	9,300,335
Screenings	28,169	566,553	* 16,381	* 311,246
	784,367	41,512,147	805,410	43,183,365
PAPER:				
News print	1,993,375	127,694,880	1,712,665	112,143,207
Wrapping	14,587	1,601,611	13,161	1,483,338
Book (cwts.)	65,367	539,103	94,641	652,661
Writing (cwts.)	6,224	51,757	14,089	112,827
	.....	133,244,841	.....	118,093,968
All other	.....	3,357,490	.....	3,701,935

* 8 months only.

Pulpwood exports in the eleven months amounted to 1,482,598 cords valued at $15,805,576 as compared with 1,489,314 cords valued at $15,162,484 in the eleven months of 1927.

Mill Service Committee Asks Information

K. E. Terry, chairman of the Mill Service Committee of the American Pulp and Paper Mill Superintendents Association, Cumberland Mills, Me., has sent out the following announcement:

"At the executive committee meeting of the Superintendents Association held in Niagara Falls October 14, 1928, it was decided to establish a special and helpful form of association activities that would involve the participation of the entire membership. This has progressed so far that a committee has been organized to be known as the Superintendents Mill Service Committee.

"The function of this committee is to collect, correlate and in an annual report disseminate information concerning progress in the art of pulp and paper manufacture in all its branches during the current year. The source of this information is to be from the membership itself.

"To this end you are expected to write the committee a statement to reach it not later than February 1, 1929. This statement should embody a record of new machinery and equipment improvement that have come under your personal observation during the past year. You are asked to chronicle the installations of new machinery devices and instruments with their application in the mill or department under your supervision; to give the name of the manufacturer of the above, to state the advantages derived and frankly discuss or relate any difficulties experienced, also include any discussion of processes or parts of processes of general practice and knowledge in which you feel improvement has been made. This report before submission must be referred to your mill management for signed approval. Equipment manufacturers in like manner will be asked to render statements pertaining to improvements and to new equipment that have been developed during the year.

"These statements codified by the committee will be printed and distributed about May 1 for the private use of the membership. They will be grouped under the various processes of pulp and paper manufacture and each report will carry the name of the contributor and his company.

"You will recognize that this procedure constitutes a service to the members of the association, to the manufacturers, and to the industry more comprehensive and direct than has been possible through personal correspondence and contact. The reports should have an ever increasing value only measured by the extent to which you individually contribute and cooperate."

Industrial Conditions in Northern New York

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., December 31, 1928.—John Warner, chief engineer at the Deferiet plant of the St. Regis Paper Company, was the principal speaker at the annual meeting of the Rotary Club held during the past week. He spoke on industrial conditions in Northern New York with reference to the meeting held recently in Watertown addressed by Floyd L. Carlisle, prominent paper manufacturer. He said that Mr. Carlisle had rendered a wonderful service to Northern New York but in rendering this service he felt that he was entitled to share in the profits. Mr. Warner said that the members of the Rotary Club gave too little attention to industrial development in this section.

"In developing a power," he said, "keep in mind a steady institution that when built up will last. Have good dependable labor, educate men to give an honest day's labor so that their employer may have a chance to make a fair profit rather than try to get the most for the least effort. True, you have not as many natural resources as you should have but still much can be done to put Carthage on the map. More serious thought should be given to establish industries on a sound basis in order that this section might prosper."

He also made a plea for cheaper modes of transportation and freight rates and commended the men with a vision who were pioneers in making the country what it is. He paid a tribute to the Carlisles for what they have done towards the development of Northern New York, calling attention to the Harrisville Paper Mill, which was taken over by them and put on a working basis.

May Build Sulphite Plant at Ogdensburg

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., December 31, 1928.—Negotiations are reported to be under way for the erection of a new sulphite plant here by manufacturing interests in Morristown. Nothing official concerning the matter has been given out as yet but representatives of the firm are said to have had several conferences with civic authorities regarding a suitable site. Morristown is a suburb of this city and a considerable supply of workers would be available for the new plant when completed. One of the largest sulphite plants in the country is located here under the control of Frank A. Augsbury, head of the Algonquin Paper Corporation. The erection of the Morristown plant is being planned by an outside concern, according to latest advices.

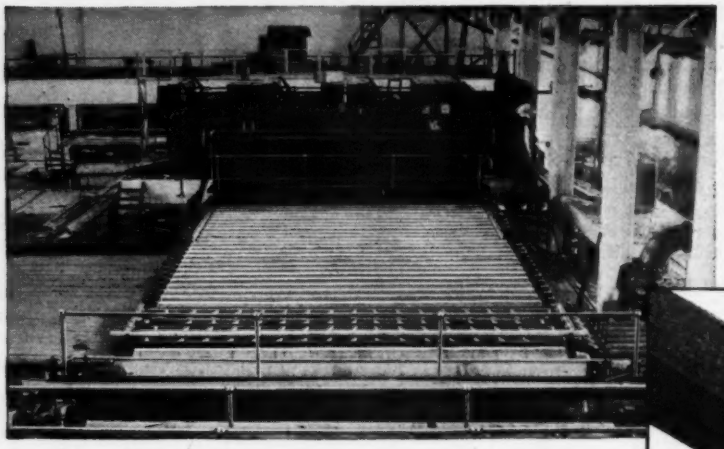

Photo shows head box on a 262" Bagley and Sewall machine just installed by the Great Lakes Paper Co., Fort William, Ont. Head box lined with Goodrich Aeroboard. As a result of the satisfactory service of this lining, this company has just ordered another Aeroboard lining for a 304" paper machine

This head box lining protects quality of paper

New Goodrich development, Aeroboard, insures uniformity of product . . . . .

AEROBOARD, the remarkable new "rubber lumber" developed by Goodrich, makes a smooth, easily cleaned head box lining.

Aeroboard is superior to African mahogany, cypress or other wood lining because Aeroboard does not accumulate slime and dirt. "Slugs" and imperfections in the sheet are substantially reduced. Head boxes lined with Aeroboard can be quickly hosed out while the felts are being washed.

Any good millwright can apply Aeroboard in your own plant by following our easy instructions. The box can be made absolutely waterproof.

We will gladly send a sample of Aeroboard and further information on its use in the paper industry. We will quote prices on Aeroboard upon receipt of head box drawings showing dimension details. Write to The B. F. Goodrich Rubber Co., Akron. O.. or use the coupon below.

Goodrich Vulcalock couch rolls

Goodrich process eliminates hard rubber base — rubber cover is joined directly to the metal core. Adhesion 500 lbs. to the square inch. Can be made with aluminum core, cutting down weight by two thirds. Send for details.

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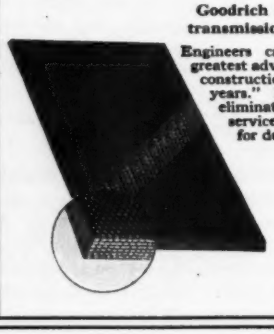

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Vulcalock couch, worm, and press rolls;

Highflex belting;

Rubber lined pipe and fittings;

Fire, water, air and steam hose;

Cutless rubber bearings, rubber lined tanks, screen diaphragms, gaskets, packing.

Flexite buckets and dippers.

THE B. F. GOODRICH RUBBER CO. P T J-1
Akron, Ohio

Gentlemen: Please send without obligation to me, a sample section of Aeroboard and data on its application to head box lining.

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Measurement of White Water Flow with V-Notch Weirs and White Water Analysis

By H. L. Joachim [1]

Knowledge of white water losses in Paper mills is based in general on two determinations, that of the volume of the effluent and the amount of fibre and filler in the white water. While the latter determination seems to offer no difficulties when using the "standard" method of filtering a definite quantity through a tared filter paper and ashing the precipitate, the measurement of the flow of the mill effluents has been considered rather technical by the majority of the mills and it is felt that the present unfortunate lack of knowledge of actual white water losses is mainly due to the lack of practical information on metering water.

Fluid meters are in general of four classes: weighing, volumetric, velocity and weir meters. Besides these mechanical meters float and chemical indicator methods of determining the velocity have been tried out with more or less success for the approximate determination of white water flows, but the 90 degree V-notch weir seems to have had the most extended and satisfactory use.

Water Meters

Water weighers are either of the single or double tank type. The overbalancing of the weighing tank regulates a feed valve, the number of discharges of the tanks is numerically recorded by a counter and multiplied by the tank unit weight in calculating the flow. Water weighers must be fed with a gravity flow, their accuracy of about two percent is not affected by temperature variations but the volume of effluent of the average paper mill obviously is too large to be handled by this type of meter.

Disc and piston meters belong to the class of volumetric meters. Disc meters operate by the gyration of a disc in a spherical chamber and the action of the piston meters is similar to that of a duplex steam pump, measuring off definite volumes of water per stroke. Their accuracy approximates 1-1.5 percent, but temperature affects all of these types so that they must be calibrated for the temperature at which they are to be used. This, of course, makes their application on white water undesirable.

The application of the velocity type of meters in white water work is very limited although venturi meters and pitot tubes are extensively used by other industries for measuring flow through large pipes. Where white water is being lifted by pumps, orifice type of meters may be used if precautions are taken to prevent the orifice passage from clogging due to stock in the effluent.

V-Notch Weirs

Right angle V-notch weirs have been found to be the best and simplest for measuring white water flows. Sometimes mill sewers are located in almost inaccessible places and it may then become necessary to use one of the numerous types of rectangular or trapezoidal weirs, such as submerged, suppressed, with or without end contraction or free overfall weirs. V-notch weirs have the advantage of accurate readings at widely fluctuating flows, they may readily be equipped with recorders and are practically unaffected by temperature variations.

The flow box and V-notch plates can be satisfactorily built in the mill. Fig. 1 shows the construction and dimensions of two flow boxes and plates, the smaller one having been built for a maximum flow of 800 and the larger one for 1500 gallons per minute maximum flow. Baffles are necessary to get an absolutely undisturbed flow across the V-notch. The V-notch plate is made of ⅛ inch steel, the edge or lip is absolutely straight and uniform and bevelled to 1/16 inch at an angle of 30° against the flow. These plates may, of course, be made from corrosion resisting metal if the effluent should require such due to high acidity or presence of chlorine. Where the flow is large, multiple V-notches may be used. The boxes and baffle plates are built from 2 inch lumber. A washout valve in the bottom of the box is desirable for cleaning and draining during the cold weather period to prevent freezing of the water in the flow box during shut downs. The notch plate and box should be kept clean at all times, especially when the white water has a tendency to form slime.

A number of discharge formulas has been determined for use on V-notch weirs.

Authority	Angle of V-notch	Discharge	
J. Barr	90 deg.	$q = .31358$	$H^{2.48}$
H. W. King	90 deg.	$Q = 2.52$	$H^{2.47}$
Doebler & Rayfield	28 deg.	$Q = .6405$	$H^{2.448}$
V. M. Cone	120 deg.	$Q = 4.40$	$H^{2.487}$
	60 deg.	$Q = 1.446$	$H^{2.470}$

Q = Discharge in cu. ft. per second
q = Discharge in cu. ft. per minute
H = Height of flow in feet

Table 1 gives the volume of flow over a 90 deg. V-notch in gallons per minute, using the formula $2.28H^{2.5}$ and Table 2 gives the flow over a 45 deg. V-notch in cu. ft. per hour. (To convert gals. per min. to cu. ft. per hour multiply by 8.03)

[1] Member TAPPI; Technical Director, Container Corporation of America, Philadelphia, Pa.

TABLE 1
FLOW OF WATER OVER 90 DEGREE V-NOTCH WEIR
(Gallons per Minute)
Fractional Parts of an Inch

Head In.	0	1/8 .125	1/4 .25	3/8 .375	1/2 .50	5/8 .625	3/4 .75	7/8 .875	In.
0	0	.011	.07	.195	.399	.70	1.1	1.60	0
1	2.28	3.06	3.98	5.05	6.25	7.68	9.24	10.98	1
2	18.24	14.97	17.31	19.83	22.53	26.47	28.59	31.96	2
3	35.54	37.57	43.41	47.70	52.26	57.01	62.02	67.39	3
4	72.96	78.77	86.13	91.40	97.93	104.85	112.08	119.72	4
5	127.45	135.55	143.96	152.73	161.65	171.11	180.75	190.79	5
6	201.	212.10	222.65	236.54	245.64	257.58	269.88	282.6	6
7	295.61	308.89	322.37	336.87	351.28	366.0	381.24	396.79	7
8	412.66	430.1	445.71	462.71	478.19	498.48	516.35	535.03	8
9	554.04	573.57	593.23	613.66	634.18	655.2	676.66	698.62	9
10	720.94	743.83	767.29	784.9	814.08	840.9	864.25	888.46	10
11	912.18	931.6	979.2	1003.0	1023.4	1047.2	1066.6	1091.4	11
12	1136.	1172.9	1197.7	1221.6	1246.4	1308.6	1334.5	1362.2	12

V-Notch Recorders

These weirs may be equipped with recorders furnishing a graphic chart of the rate of flow and an integrator for the total flow and where white water heat losses are of sufficient interest a recording thermometer may be built in to give flow and temperature on one chart, synchronized as to time. Two types of recording V-notch weir meters dominate the field, the disc-cylinder and cam type and both are equally satisfactory for white water work. These meters may be located directly at the weirs or at some distance at higher or lower level. The latter is a strong advantage because it often permits the better use of the records by beater room and machine crew if the flow is at all times visible to them.

Alarm Systems

Where a continuous record of the flow does not seem necessary, high water level alarm systems are often found helpful. If the

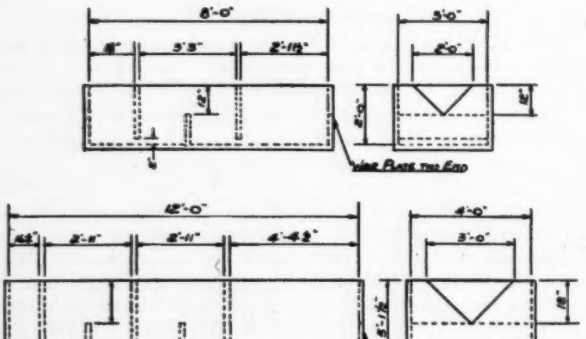

FIG. 1

flow rises above a definite permitted maximum a floating contact automatically rings an alarm horn. These systems are being built in a practically foolproof way so that any tampering with the installation at any time will ring a trouble bell.

White Water Analysis

To get the whole story of white water losses — and to get it quickly for the mill—an adequate method of determining the amount of stock and filler should be available. The importance of a truly representative sample of the effluent for this analysis can hardly be overemphasized. These composite samples should be collected in proportion to the flow, preferably by an automatic device such as is described by Edwardes[2] and which is now available on the market.[3] Methods of sanitary analysis have recently been outlined by L. F. Warrick[4] and they are no doubt of great value when stream improvement is the chief consideration. To determine the amount of recoverable fibre and filler in the effluent it has been customary to use the so called standard method of filtering a definite quantity of the representative

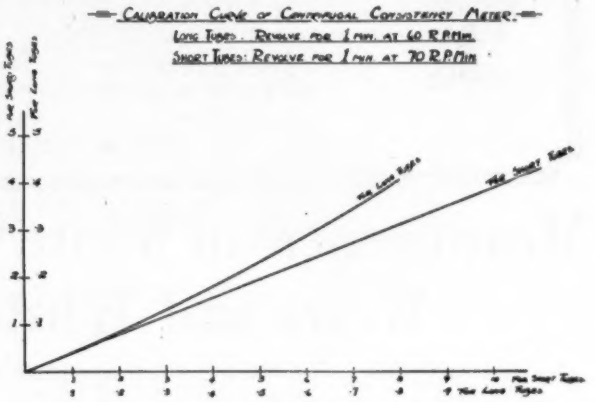
CALIBRATION CURVE OF CONTINUOUS CONSISTENCY METER.
LONG TUBES: REVOLVE FOR 1 MIN. AT 60 R.P.M.m.
SHORT TUBES: REVOLVE FOR 1 MIN. AT 70 R.P.M.m.

FIG. 2

sample through a tared filter paper or Gooch crucible and to dry and subsequently ignite the precipitate.

Where quick results for the mill are of greater importance than high accuracy, a centrifuge may be used to throw the suspended fibers and filler to the bottom of a graduated glass tube and it has been found practicable to work out curves showing the relation between height of sediment in tube and amount of stock in white water. (Fig. 2). Where the changes in the nature of the stock, its acidity and temperature are only small, these curves are very satisfactory.

Soluble Organic Matter

It has recently been suggested that the length of time elapsed between sampling and analyzing of white water samples might seriously interfere with the correct interpretation of stock losses due to the decomposition of organic material in the effluent. Where decay actually has commenced it will surely continue in the white water samples, unless they are immediately sterilized after they have been collected No definite data are available to show this rate of decomposition, but the method suggested for its determination[1] is of interest and has given valuable information in actual mill practice. This analysis determines (1) total solids, (2) total suspended matter, (3) total solubles, (4) soluble organic matter, (5) soluble minerals, (6) suspended organic matter, and (7) suspended mineral matter. The method is simple and may be carried out in a reasonable length of time with the ordinary mill laboratory equipment. It consists of the so-called standard method of filtering a definite quantity of effluent through a tared filter paper, drying and igniting the precipi-

TABLE 2
FLOW OF WATER OVER A 45 DEGREE V-NOTCH WEIR
(Cu. Ft. per Hour)
Fractional Parts of an Inch

Head In.	0	1/8 .125	1/4 .25	3/8 .375	1/2 .50	5/8 .625	3/4 .75	7/8 .875	In.
0	0	.0704	.398	1.23	2.251	3.933	6.229	9.121	0
1	12.77	17.11	25.02	28.30	35.23	42.95	51.68	61.50	1
2	72.15	84.07	97.09	111.0	126.3	142.3	160.1	179.1	2
3	199.3	220.9	242.7	267.0	292.6	327.1	348.2	378.3	3
4	409.7	441.1	475.5	511.6	549.3	586.6	627.4	669.9	4
5	714.1	759.9	807.5	854.4	905.5	958.2	1013.	1067.0	5
6	1128.	1185.	1250.	1311.	1376.	1441.	1510.	1582.	6
7	1655.	1731.	1808.	1888.	1970.	2052.	2137.	2224.	7
8	2313.	2405.	2500.	2594.	2693.	2793.	2897.	3002.	8
9	3107.	3218.	3331.	3445.	3561.	3680.	3801.	3925.	9
10	4052.	4180.	4311.	4444.	4578.	4714.	4852.	4993.	10
11	5136.	5281.	5429.	5579.	5734.	5889.	6048.	6212.	11
12	6378.								12

[2] V. P. Edwardes, Paper Trade Journal 53, April 30, 1925.
[3] Montague Machine Co., Turner Falls, Mass.
[4] L. F. Warrick, Paper Trade Journal 57, November 15, 1928.

tate, thereby determining total suspended, suspended mineral and suspended organic matter, which in the language of the paper maker is the either partly or wholly recoverable stock. A corresponding quantity of white water is evaporated on a steam bath, the residue dried, weighed and subsequently ignited. This determines the total solids, total organic and total mineral matter and subtracting from these the suspended organic and suspended mineral matter gives the soluble mineral and soluble organic matter.

A Typical Analysis

A typical average analysis of this kind made on machine white water from test liner and chip board reads as follows:

Total solids	15.66 pounds per thousand gallons
Total suspended material	4.16 pounds per thousand gallons
Total soluble material	11.50 pounds per thousand gallons
Soluble organic material	5.77 pounds per thousand gallons
Soluble mineral material	5.73 pounds per thousand gallons
Suspended organic material	2.83 pounds per thousand gallons
Suspended mineral material	1.33 pounds per thousand gallons

Value to Board Mills

Due to the great amount of waste paper used in their operation board mills should primarily be interested in this amount of soluble organic matter, representing the decomposing fibre, and any effort to reduce this loss is a step in the right direction. The recovery of this material will not only mean stream improvement due to a decrease of the oxygen demand of the effluent, but also recovery of additional boardmaking material.

Conclusions based on actual determination of flow and recoverable stock readily "sell" the idea of waste and recovery when converted into dollars and cents. Those with whom rests the final decision on the installation of recovery equipment need not be bothered with the interpretation of monotonous rows of figures in terms of pounds and gallons. Assuming a conservative value for recoverable stock which may run from $15 up to $30 and higher per ton and the value of one million B. T. U.'s lost with the white water as the equivalent to the coal cost of 1000 pounds of steam will usually show white water utilization to be one of the most profitable investments for the mill.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Drying

Automatic Control of Moisture in Paper. J. G. Callan and Albert Allen. Paper Mill 51, No. 22, 10, 12, 78-80 (June 2, 1928); Paper Industry 10, 485-489 (June 1928). A discussion of the advantages of continuous automatic control of moisture in paper as it comes off the paper machine, with a description of the Verigraph developed by the Atlantic Precision Co. (consisting essentially of two loosely coupled radio-frequency oscillatory circuits, a primary and a secondary, with an indicating or recording instrument responsive to relative tuning in the secondary, and means of relative tuning controlled by the moisture content of the sheet).—A.P.-C.

Moisture Measuring and Recording Apparatus. G. S. Witham, Jr. U. S. pat. 1,646,516, Oct. 25, 1927. Air is drawn through a radiator to cool or condition it, through a 'sample box" in contact with the traveling paper web (preferably just before it reaches the last sweat drier) and then through a suitable hygrometer (e.g., a wet and dry bulb psychrometer) from which it is discharged to the atmosphere. The air pasing through the sample box takes up moisture from the paper and is heated to an extent depending on the temperature of the paper. An indicator shows the difference in temperature between the wet and dry bulbs and may be calibrated to read either in degrees of temperature or directly in per cent moisture of the sheet. Several different methods of construction of the sample box are described, all of which allow the air to come in contact with either the whole width of the sheet or any desired portion thereof.—A.P.-C.

Steam Plant Economic in Paper Mills. F. C. Farnsworth. Paper Mill 51, No. 22, 38-42, 52 (June 2, 1928); Paper Trade J. 86, No. 23, 82-84 (June 7, 1928). A discussion of the importance of rapid and efficient steam circulation in paper driers in order to obtain maximum heat transmission to the sheet and prevent the heat insulating effects of air and accumulated condensate in the drying cylinders. The manner in which these objects are attained by the Farnsworth system is described.—A.P.-C.

Drier Condensate Removal Systems. E. T. Harbert. Pulp & Paper 26, 849-852 (June 21, 1928). From the point of view of drier performance the ideal condensate removal system should embody the following features: (1) the entry to the discharge pipe should be kept at all times below the surface of the water within the drier in order to prevent the escape of steam. (2) The level of the condensate within the drier should at all times be held accurately at a minimum consistent with the maintenance of the discharge seal. (3) The force that is utilized to produce flow through the discharge pipes should be of a positive and constant nature, in order to ensure against stoppages as a consequence of air locks or similar contingencies. (4) Adequate provision should be made for the generation of flash steam from the condensate water as primarily discharged, and for the introduction of this flash steam into a portion of the drier system. An illustrated description is given of a recently developed system embodying all of those features, which has been in operation about twelve months on a 232 inch news machine running up to and over 1,000 feet per minute, and the advantages of the system are briefly discussed.—A. P.-C.

Thermodynamics Applied to Paper Drying. F. C. Farnsworth. Paper Mill 51, No. 13, 18, 20, 37 (March 31, 1928). A discussion of the effects of condensed steam in the drier on heat transmission through the drier roll shells.—A.P.-C.

Modern Method of Paper Drying. Ogden Minton. Paper Mill 51, No. 22, 30, 34, 58-60 (June 2, 1928). A discussion of the merits of the Minton vacuum drier in the light of the performance of the commercial installation on a 156 inch news machine at the Kenogami mill of Price Bros. & Co., showing how this bears out the claims made by the inventor six years ago before any large installation had been made.—A.P.-C.

Drier for Wall Board. A. J. Vance assignor to Coe Manufacturing Co. U. S. pat. 1,656,802, Jan. 17, 1928. The patent covers various features in the construction of tunnel board driers to minimize escape of heated air or other drying medium from the inside of the drier and entry of cold outside air into the drier, to reduce to a minimum difficulties of anchoring of the sections while allowing for expansion, and to provide for adjusting the relative position of the sides of the drier longitudinally so that a proper feed of the strips or sheets being treated will be ensured.—A.P.-C.

Drying Paper Boards. R. Kastner and H. Schmolka. Eng. pat. 284,319. The sheets of moist paper board are piled in a

press, being divided by plates with or without sieve sheets on one or both sides, and are first subjected to pressure by which part of the water is squeezed out. Then heat is applied and the pressure increased and a further quantity of water is thus removed, boiling of the water present is avoided, 70 degrees C being a suitable temperature for this stage, and the heating is continued until the mass contains about 70 per cent of dry paper. The temperature is then raised to 100 to 110 degrees C. and the pressure reduced to allow the steam escape, then increased and reduced alternately until the product reaches an air dry condition. Where sieve sheets are used they may be cut from old paper machines wires and preferably first pressed to reduce the capacity of the cavities. The heating may be effected electrically, the plates between the sheets being connected with a source of three-phase alternating current in such a manner that the current can be increased as the board gets drier.—A.P.-C.

Drying Paper. E. A. Ohlin. Eng. pat. 285,914. Paper in the form of a continuous web is dried by passing over heated rolls, preheated air being conducted over the web in the direction of feed. The fresh drying air is preheated by air which has passed over the web, while the hood which surrounds the roll is heated to a higher temperature than that of the drying air, e.g., by condensate from the drying roll.—A. P.-C.

Steam for Drying Paper. J. E. Alexander. U. S. pat. 1,645,-366, Oct. 11, 1927. Superheated steam of approximately uniform temperature is maintained in a chamber surrounding the material and variable degrees of "concentration of heat" are applied to material in the drying chamber, which are regulated by electric heaters.—A.P.-C.

Air-Distributing System for Paper Machine Driers. E. van Asten. U. S. pat. 1,660,640, Feb. 28, 1928. Hot air is supplied across the full width of the machine by means of hollow perforated rotating tubes, some of which may be used as felt rolls. In order to keep the air pressure uniform across the whole width of the machine, the section of passage from the air inlet end to the opposite end of the tubes is gradually reduced. In order to obtain even distribution of the air, the slots in the tubes are arranged on helical lines.—A.P.-C.

Rope Guiding Bracket for Paper Machine Driers. R. Carpenter. U. S. pat. 1,660,917, Feb. 28, 1928. A guide bracket is provided which is separate and distinct from the drier roll and located in fixed position alongside the ropes adjacent the point where they enter the groove at the end of the drier roll, this bracket being constructed and arranged to prevent the ropes from being displaced sideways sufficiently to permit of their moving out of the groove.—A. P.-C.

Paper Drier Roll. A. D. Harrison. U. S. pat. 1,670,113, May 15, 1928. A rigid hollow shaft extends through the center of the roll and is provided with perforations to allow steam to pass into the roll. Brackets forming hangers are rigidly secured to the shaft at intervals and are suitably braced. They support an elongated scroll forming a water catcher and trough, and a siphon extends through the shaft and into the trough to remove the water of condensation from the roll.—A.P.-C.

Effect of Drying on Strength and Beating Various Pulps. R. D. Kehoe. Pulp Paper Mag. Can. 26, 311-313 (March 8, 1928); Paper Mill 51; No. 10, 26, 28, 38 (March 10, 1928). Strength tests were carried out on a number of samples of wet and dry kraft and sulphite pulps, (a) as received, (b) after atmospheric drying under conditions similar to loft drying, (c) after predrying at a temperature not exceeding 110 degrees F. to approximate the conditions used in the Fidalgo drying system, (d) after drying on a drying cylinder with steam at a pressure of about 10 pounds. No difference was noted between the average strengths when treated by methods (a) and (b). The same is true of sulphite treated according to (c), while kraft thus treated showed a loss in strength of about 5 per cent. A sharp decline was observed in pulps treated according to (d), amounting to about 11 per cent for kraft and 10 per cent for sulphite.—A.P.-C.

Radio Control of Moisture in Paper Drying. W. D. Somerville. Paper Trade J. 86, No. 8, 131-135 (Feb. 23, 1928); Paper Mill 51, No. 8, 90-94, 100 (Feb. 25, 1928). The capacity of an electric condenser depends on the area of the plates, the distance between them and the dielectric constant of the medium between the plates. Interposing a sheet of paper between the plates changes the capacity to an extent which varies according to the nature and weight of the paper. In applying this principle to the continuous automatic weighing of paper on the papermaking machine the web is passed between the plates of a condenser connected in a radio pickup circuit, which is tuned somewhat below resonance with an oscillator circuit. Variations in weight of the paper increase or decrease the capacity of the condenser, thereby tending to tune the circuit towards or away from resonance. To indicate or record the varying amounts of current picked up by the tuning circuit, the radio frequency current is passed through a thermocouple, tuning it into direct current, and reading the quantity of this current on a milliammeter which is graduated so that definite changes in weight are indicated or recorded. Changes in temperature affected the readings by altering the size of the condenser plates and latering the shape of the frame holding the plates, moving them nearer or further apart. The trouble has been overcome by combining changes of design with the use of invar steel, which has a negligible expansion coefficient. In applying the principle to the automatic and continuous determination and control of the moisture content of the sheet a hygrometer is used in which the sensitive element consists of a hygroscopic material; one end of the element is attached to the hygrometer case and the other end to the movable plate of a book condenser, and the latter is put in parallel with the tuning condenser of the tuned circuit so that any change in the length of the element changes the tuning of the circuit and in turn varies the amount of current picked up. The changes in current are recorded by the milliammeter as above described. It was found that changes of less than 0.25 per cent of moisture in the paper could be recorded. Steam admission to the driers in order to maintain constant moisture content in the paper can be controlled from the milliammeter by means of an electrically operated valve mechanism. In order to eliminate the hunting due to the time lag between the changing of the steam supply and the effect of this change on the paper, a "corrective followup" mechanism is provided, operated by means of a followup and a corrective timing device which can be set to synchronize with the steam lag. The merits of these devices in obtaining uniformity of product are briefly discussed.—A.P.-C.

Device for Automatically Measuring and Adjusting the Weight of Paper on the Machine. Atlantic Precision Co. Fr. pat. 620,381; Paper Trade J. 86, No. 8, 137-140 (Feb. 23, 1928). Also Eng. pat. 276,469. The paper sheet is passed between two metal plates forming an electric condenser, the dielectric of which consists of the paper web and the layer of air between the paper and the plates. When the mass of paper passing between the plates varies, the relative amounts of air and paper in the dielectic also vary, and the electric characteristics of the condenser are correspondingly modified. Variations in the capacity of the condenser are used to measure variations in weight of the paper in the same manner as provided for in Fr. pat. 618,406 for measuring the moisture content. In order to correct for variations in moisture content of the sheet (so as to obtain ultimately the dry weight of the paper), there is provided a supplementary condenser the electrical characteristics of which are determined and modified by the moisture content of the sheet and the correction is preferably obtained by tuning the transmitting circuit to correspond with this modification. The weight-indicating instrument can be made to control the amount of stock fed to the paper machine wire by operating a motor which raises or lowers the slice according as the weight of the paper is too low or too high.—A.P.-C.

Bleaching Sulphite Pulps*

Dr. L. Rys.[1]

Low or High Consistence?

Attempts to increase the economy of the bleaching process have lately attracted the interest of pulp technologists to a high degree. In particular, a great amount of attention has been given to the question of bleaching at high consistence. It has long been known that bleaching at high consistence shortens the time required and saves heat. The latest work in this direction attempts to reach a purely mechanical solution of the problem, by developing a satisfactory apparatus for producing a very thorough mixing of pulp and bleaching agent. If the mixing is not thorough and even, all the advantages of bleaching at high consistence will hardly offset the irregularity of the bleached pulp, for parts of the pulp will be overbleached, while other parts are underbleached, and this will seriously affect both the chemical and mechanical properties of the bleached pulp.

We will now briefly consider the advantages of bleaching at high consistence.

a. Increased Speed of Reaction, and Cold Bleaching

Aside from the saving of heat the acceleration of the bleaching process is important in other ways. It not only allows better utilization of equipment, but also permits the process to be made either wholly or in part continuous. So far no method —except hot bleaching—has been found for successfully accelerating the bleaching at low consistence. Acidifying is bad for the color and chemical properties of the pulp. Catalytic acceleration, which has been investigated by many and also patented, has not worked out well in practice to date, for the color produced with a normal bleach consumption is low.

b. Improved Utilization of Space and Decreased Power Consumption

So far as saving of space is concerned, it is plain that it cannot be as great when bleaching at low as at high consistence, unless the speed of the low consistence bleach can be increased over that at high consistence. The power consumption in high consistence bleaching of course depends much upon the mechanical arrangement. However, if it were possible to shorten the bleaching time at low consistence very considerably, it is obvious that the power consumption would then stand in a much more favorable relation to that at high consistence.

c. Improved Quality of the Bleached Pulp

Improved chemical and mechanical quality of the pulp bleached at high consistence has not yet been definitely established. It is not impossible that a certain success should be obtained in this direction, however, both from the decreased bleaching time, and more especially the lower chlorine consumption necessary to produce a given bleaching effect.

d. Saving in Chlorine

It is certain that considerable amounts of chlorine can be saved by bleaching in two stages at high consistence, as against the single stage, low consistence, bleach. This saving, which increases with the amount of incrustants present in the pulp, is mostly caused by the removal of the oxidisable substances between stages of the two stage bleach. If, however, we compare the two-stage bleach at low and high consistence, the margin of saving in favor of the latter becomes very small. In any event, the nature and degree of washing between stages is of great importance in bringing about this saving.

In bleaching at high consistence, the preliminary bleach is of greatest importance. Holding the second stage at high consistence possesses no especial advantages, either as regards the color of the product or the chlorine consumption. It has been observed that the second stage takes as long or longer when carried out cold at high consistence as when carried out warm in the hollander. With a weak pulp a harmful effect on quality must be feared if the last stage is carried out at high consistence[3]. This is not the case if the hollander is used for this stage. The only important savings in carrying out the second stage at high consistence are then simply those in space and possibly in heat effected by the smaller quantities of liquid which must be handled.

The interesting features of high consistence bleaching from the chemical standpoint are the acceleration of the reaction and the saving in chlorine, which may be considered as brought about by the increased concentration in the first stage.

As has been pointed out earlier in our studies[3] the speed of reaction is dependent, aside from the temperature, upon the degree of chlorination, and increased consistence in bleaching results in increased chlorination[4].

Increased chlorination and consequent shortening of the bleaching time may also be caused by using hypochlorite solutions which have been acidified or treated with chlorine water. The maximum effect is obtained by bleaching with chlorine water alone.

In bleaching in the first stage with acidified hypochlorites or chlorine water colored substances are, however, produced which are very hard to wash out by the use of water alone. Because these substances are also hard to break down in the second stage of bleaching, the final bleached pulp generally has a brownish tinge. We know very little about the composition of these colored substances. We may, however assume that they are also formed when bleaching with hypochlorites, but that in this case, because of the alkalinity of the solution and consequent stronger oxidation, the color is more rapidly destroyed. They also appear to dissolve much better in alkaline solutions, whether they have been chemically changed by oxidation or not.

If we wish to accelerate the bleach by the use of chlorine water we must find a convenient means for either decreasing the formation of these colored products, or for readily removing them after the first stage of the bleaching. It is clear that the removal of these products without the use of chlorine or its compounds, must lead to somewhat of a saving in chlorine, since these products themselves consume certain amounts of chlorine for decoloration or oxidation, as will be illustrated later. Incidentally the danger of oxidation of the cellulose, that is of high copper numbers, is avoided. This is because oxidation of the cellulose first starts (generally in the second stage) when there are no more substances present which are more readily oxidizable under the existing condition than is the cellulose itself.

The chemicals which are practically available for such an extraction of the remaining chlorinated lignin-residues or their sulfonated derivatives are, in the first place, the cheap alkalies, sulfites, or sulphurous acid.

The bleaching experiments described below, though of course not to be looked upon as a complete solution of this problem, do show that the first bleaching can be carried out very well with chlorine water at ordinary temperatures. It can be seen from the results that the use of chlorine water not only leads to outstanding color and purity of product, but also to savings in chlorine unattainable by any of the present methods.

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* Authorized translation by R. H. Doughty. All rights reserved by the author. Papier Fabrikant XXVI, Nos. 17, 18 and 19 (1928).

[1] Eichmann and Co., Sandhübel, Schliesen, Czechoslovakia.

[2] See Papierfabr. 25, 559 (1927).

[3] Papierfabr. 24, No. 35 (1927). Paper Trade J., Nov. 3, 1927.

[4] Cf. Fig. V, VI, loc. cit. under (3).

First Series of Experiments
Extraction with Alkaline Solution Before Bleaching

First, in order to determine how much of the chlorine which goes into solution during bleaching is consumed by the pulp, the following simple series of experiments was carried out.

Five portions of a normal Ritter-Kellner sulphite pulp were treated with equal amounts of beaching powder. After definite intervals of time the liquor was rapidly sucked off and the available chlorine determined in an aliquot portion. After these liquors had stood for 24 hours they were again analyzed for chlorine. At the same time the decomposition of the bleach without any pulp present was determined on a blank (No. 6). The results are shown in Table 1 and Fig. 1.

TABLE 1

Sample Number	Bleach powder added, per cent	Bleaching time until separation of the liquor, hours	Bleach powder consumed by the liquor, per cent	Analysis of separated liquor after standing 24 hours: Total bleach consumed, per cent	Analysis of separated liquor after standing 24 hours: Bleach consumed by the liquor after separation, per cent
1	20.2	0.25	7.4	11.05	3.65
2	20.2	1	11.05	14.67	3.62
3	20.2	4	14.65	18.20	3.55
4	20.2	6	15.95	18.89	2.93
5	20.2	10	17.64	19.29	1.65
6	20.2	blank test on liquor		0.4	0.4

50 gm. Ritter-Kellner pulp, bleachability 20 per cent, used for each test. Temperature 20° to 23° C. Consistence 5 per cent.

It appears that even at the start of the bleach, substances go into solution which can consume considerable quantities of chlorine. In a similar experiment with a weak pulp (12% bleachability) the same results were obtained. The chlorine required for oxidation of the dissolved substances was nearly 2.3%, as

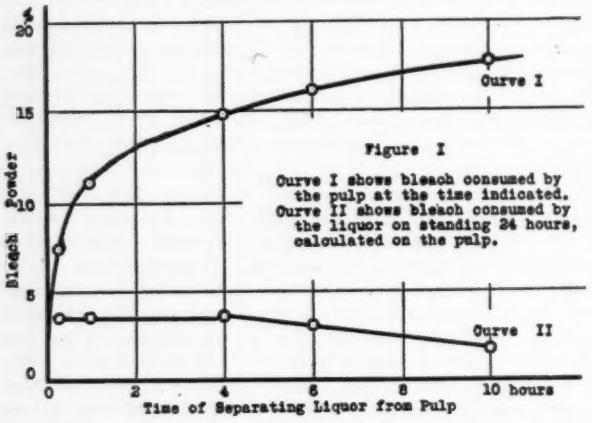


Figure I

Curve I shows bleach consumed by the pulp at the time indicated. Curve II shows bleach consumed by the liquor on standing 24 hours, calculated on the pulp.

one might expect. It is important to note that these oxidisable substances which go into solution are not oxidised at once, but later in the course of the bleaching.

Samples of the same pulp used above were next given a preliminary bleaching with various amounts of bleaching powder. Samples 4 and 5 were given an hour's treatment with weak NaOH solution instead of the preliminary bleach. The solution in No. 5 also contained a little bleach. After this pretreatment the liquors were separated from the pulp and aliquot portions treated with equal amounts of bleach powder. After standing 24 hours the remaining bleach was determined.

From Table 2 and Fig. 2 we see that more oxidisable substances are removed by the alkaline treatment than by the action of the bleach. If the filtrate from the alkaline treatment is

TABLE 2

Sample Number	Bleach powder added, % per cent	Tests on Separated Liquor: Bleach powder added to liquor (calculated on the pulp) per cent	Bleach powder determined after 24 hours standing, per cent	Bleach powder consumed by the liquor, per cent
1	0.5	10	8.86	1.14
2	0.5	10	8.70	1.30
3	0	10	7.88	2.12
4*	0	10	8.46	1.54
5*	1	10	8.28	1.72

* These samples treated with 1 per cent NaOH (calculated on the pulp). 50 gm. Ritter-Kellner pulp, bleachability 20 per cent, used for each sample. Temperature 20° C.

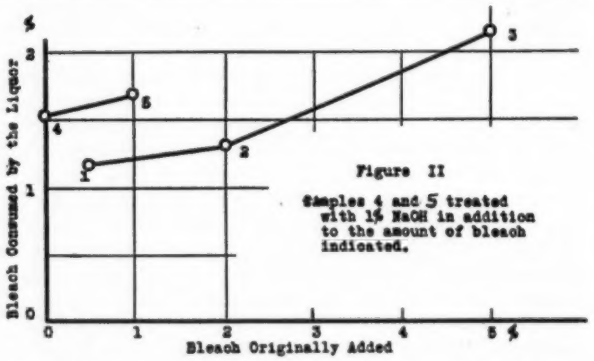


Figure II

Samples 4 and 5 treated with 1% NaOH in addition to the amount of bleach indicated.

made weakly acid and treated with chlorine water, it becomes yellowish or reddish brown in color. This is an indication that a part of the substances which cause the dark color of chlorinated pulp have gone into solution.

In order to see how this alkaline treatment affects the bleaching with chlorine water the following experiments were performed. An easy-bleaching Ritter-Kellner pulp was given a preliminary bleach with chlorine water, washed, and finished off with bleaching powder. Sample 2 was given a preliminary treatment with warm alkali solution containing a small amount of bleaching powder, before the chlorine-water treatment. The total amount of active chlorine added to samples 1 and 2 was the same. The pulp was washed on a fine mesh screen with a stream of water. The preliminary bleaching was carried out in closed glass flasks, the final bleaching in open glass beakers, in a water bath, with occasional stirring. The conditions are given in detail in Table 3.

It can be seen from this that the alkaline treatment brings about a perceptible improvement in color, and hinders the formation of the brown tint.

Following up these interesting phenomena, we carried out a series of bleaching experiments under various conditions. Tables

TABLE 3

Sample Number	Pulp used, gm.	Extraction: Kind and amount of chemical used	Extraction: Consistence, per cent	Extraction: Temperature, deg. C.	Extraction: Chlorine water calculated as bleach powder, %	First stage bleach: Consistence, per cent	First stage bleach: Temperature, deg. C.	First stage bleach: Time, hours	Second stage bleach: Bleach powder, per cent	Second stage bleach: Consistence, per cent	Second stage bleach: Temperature, deg. C.	Second stage bleach: Time, hours	Total chlorine used, calculated as bleach powder, per cent	Color of bleached pulp
1	50	none	..	..	5	3½	20	½	4	5	40	3¼	9	Slightly brown
2	50	10 cc. normal NaOH 1% bleach	5	60	5	3½	20	½	3	5	40	4¼	9	Good white

Pulp used, easy-bleaching Ritter-Kellner.

TABLE 4

Sample Number	First Extraction: Bleaching powder, per cent	First Extraction: Alkali, per cent [1]	First Extraction: Consistence, per cent	First Extraction: Temperature, deg. C.	First Extraction: Time, min.	First Stage Bleach: Bleaching agent expressed as bleach powder, per cent [2]	First Stage Bleach: Consistence, per cent	First Stage Bleach: Temperature, deg. C.	First Stage Bleach: Time, min.	Second Stage Bleach: Bleaching powder, per cent	Second Stage Bleach: Consistence, per cent	Second Stage Bleach: Temperature, deg. C.	Second Stage Bleach: Time, hours	Total chlorine expressed as bleaching powder, per cent	Color of bleached pulp	Alpha cellulose, per cent
1	½	1	5	50	10	6½	1	15	42	5	5	35	5.2	12		86.8
3	½	2	5	50	10	6½	1	15	60	5	5	35	7.0	12		....
5	1½	2	5	50	10	6	5	15	15	4½	5	35	4.8	12	Samples 1 to 10 very white, all alike.	87.1
6	½	1	5	50	10	6½	1	15	89	5	5	35	5.5	12		86.4
9	1½	2	5	50	10	6	1	15	68	4½	5	35	4.6	12		87.1
10	1½	2	5	50	10	6	5	15	20	4½	5	35	4.8	12		86.6
11		not extracted				6	17	20	30	6	5	35	3	12	Slightly yellow.	87.7
12		not extracted				8	17	20	95	7	5	35	5	15	Nearly equal to 1 to 10	85.5
13		not extracted				6	5	35	60	6	5	35	4	12	Slightly more dark than 11.	87.6

[1] Samples 1 to 5 treated with NaOH, samples 6 to 10 with Ca(OH)₂.
[2] Samples 1 to 10 treated with chlorine water, 11 to 13 with bleaching powder. Samples 11 and 12 made alkaline with 1 per cent NaOH. Ritter-Kellner easy-bleaching pulp used for all tests.

4 and 5 are illustrative examples. The results we may summarize as follows:

1. ALKALINE EXTRACTION: The time of extraction is governed by the temperature and alkalinity, and its extension is advantageous. Cold and warm extraction give the same results. The addition of hypochlorite to the extraction mixture is not absolutely necessary. Milk of lime gives the same results as caustic soda. It is best to use 0.5 to 1 per cent of active alkali, on the bone dry pulp weight. Very thorough washing after the extraction is of greatest importance.

2. PRELIMINARY BLEACHING: The alkaline extraction may be used to advantage with a preliminary hypochlorite bleach, either at high or low consistence. It gives the best results, however, if the preliminary bleach is carried out with chlorine water. It is best to add such an amount of chlorine water in the preliminary bleach, that at least 25 per cent of the total chlorine will be used in the final hypochlorite bleach. That is, the amount of the final bleach should be large enough to decolorize the colored substances already formed.

3. FINAL BLEACHING: The chlorine used in the final bleaching must bear the proper relation to the amount used in the preliminary bleaching (see above). The final bleaching may be either cold or warm, nearly neutral or alkaline, with about the same results. The final bleach may also be catalytically accelerated. This is most readily done by adding small amounts of the chlorides of certain metals (e.g. copper, cobalt, nickel) with the chlorine water in the first stage. In this way it is possible to cut the time for the last stage in half without damaging the product to more than a very slight extent, if at all. It appears to us that the last stage is the proper place for catalytic acceleration. In the early part of the bleaching, where the reaction goes rapidly by itself, a catalytic action may lead to greater chlorine consumption, and also if one bleaches to a good color, to a degradation of the pulp.

4. SAVING OF CHLORINE: The preliminary bleach with chlorine water always shows definite savings of chlorine as compared with the two-stage bleach at high consistence. This saving may be ascribed in part to the use of chlorine water, in part to the preliminary extraction, as will be shown in more detail later. The savings are greater with a hard pulp; they vary from 5 to 20 per cent. The correct distribution of the total chlorine between the first and second stage plays an important part. The washing is of great importance. In the laboratory it was best carried out by spraying with a strong stream of water, on a fine screen.

5. THE COLOR OBTAINED by bleaching with chlorine water following an alkaline treatment is always better than that produced by other known processes using the same amount of chlorine. In case the total amount of chlorine used does not suffice for complete bleaching, the product is of a reddish-gray tint. This is different from the pure hypochlorite bleach, which under similar conditions gives a yellowish tint to the pulp. This red-gray color is probably caused by the presence of difficultly oxidisable chlorinated substances.

6. THE CHEMICAL PROPERTIES of the pulp bleached in this way can be considered as good in comparison with that bleached by the usual two-stage process. The alpha-cellulose content has never been found to be lower, the copper numbers are the same or only slightly higher than for normally bleached pulp of like color and purity.

TABLE 5

Sample Number	First Extraction: Bleaching powder, per cent	First Extraction: $Ca(OH)_2$, per cent	First Extraction: Consistence, per cent	First Extraction: Temperature, deg. C.	First Extraction: Time, min.	First Stage Bleach: Bleaching agent, calculated as bleach powder, per cent	First Stage Bleach: Consistence, per cent	First Stage Bleach: Temperature, deg. C.	First Stage Bleach: Time, min.	Second Stage Bleach: Bleaching powder, per cent	Second Stage Bleach: Consistence, per cent	Second Stage Bleach: Temperature, deg. C.	Second Stage Bleach: Time, hours	Total Cl. used calculated as bleach. powder, per cent [1]	Color of bleached pulp	Alpha cellulose, per cent	Corrected copper number
2	1	2	5	60	10	3	10	20	25	2½	5	35	3.1	6½	Nearly like 11	88.7	1.63
3	½	2	10	20	10	3½	5	20	23	3	5	35	5.8	7	Very white	88.6	...
4	½	2	15	20	6	3½	5	20	20	3	5	35	4.5	7	Very white	88.6	1.68
6	1	2	15	20	20	3	5	20	15	2½	5	35	3.5	6½	Nearly like 11	88.9	1.65
7	½	1	10	20	15	3½	5	20	21	3	5	35	6.2	7	Very white	88.2	1.82
8	½	1	15	20	10	3½	5	20	18	3	5	35	6.3	7	Very white	88.4	1.77
9	1	1	10	20	25	3	5	20	18	2½	5	35	3.5	6½	Nearly like 11	88.8	1.70
11		not extracted				4	17	20	60	3	5	35	5.8	7	White	87.4	1.65
12		not extracted				4	5	35	71	3	5	35	4.5	7	Slightly yellow	87.4	1.63

[1] Samples 2 to 9 bleached in the first stage with chlorine. Samples 11 and 12 bleached with bleaching powder and made alkaline with 1 per cent NaOH. Pulp used for all tests, Ritter-Kellner soft easy-bleaching.

Second Series of Experiments
Extraction After the Preliminary Bleaching

As already mentioned, colored products are formed during bleaching is carried out with hypochlorite. In this case, however, and decolorized by the action of the bleaching agent, resulting in an increased consumption of chlorine. Although these substances are not wholly insoluble in water, they cannot be well removed by water alone. This is a simple inference from the color of the pulp and waste water after the preliminary chlorine-water bleach.

These colored substances are also formed when the preliminary bleaching is carried out with hypochlorite. In this case, however, as a result of the greater alkalinity and consequently stronger oxidation, they are converted at once, or very soon after formation, into yellow or colorless substances. In this state they are easily soluble and can be washed out more readily. The color of the bleached pulp and the waste liquor accordingly presumably depends upon the relation between chlorination and oxidation during bleaching. Thus the color of pulp bleached in the first stage at high consistence is darker than if low consistence were used, and also the pulp bleached in the first stage with chlorine water must appear rather dark. In the same way we may explain why insufficiently bleached pulp is reddish if chlorine water was used in the first stage, while if hypochlorite was used in that stage the underbleached final production is yellow. That is, the final stage must oxidise compounds which are in the first case reddish, in the second case already partially decolorized and yellow.

In the agreement with the foregoing, the color of pulp and waste liquor after the first stage must be darkest when strong chlorination is accompanied by slight oxidation. This is the condition when the greater part of the chlorine is required simply to separate the incrustments. The color of pulp and waste liquor will be brightest, on the other hand, when strong oxidation is accompanied by slight chlorination, or when a greater part of the chlorine goes to decolorize the chlorinated incrustants, which is the case when bleaching in alkaline solutions.

If now it were possible in any way to remove or wash out the separated but not yet oxidised, incrustants, the total chlorine consumption would be further decreased. In this case all the final bleach would have to accomplish would be the removal of the incrustants remaining and the decolorizing of the substances which had withstood the washing.

As already noted, the most practical materials for removing the chlorinated incrustants after the preliminary bleach are the cheap alkalies or sulphurous acid. Unfortunately the sulphites, whose solvent power for chlorinated lignin is well known, are effective only when strongly heated.

On the basis of the ideas here suggested, we have tried, among other things, to use the sulphurous acid in sulphite waste liquor for removing the colored substances after the preliminary chlorine-water bleach. The partly bleached pulp was indeed brightened up by this treatment, but no noticeable difference was found in the final product. On the other hand very good results had previously been obtained when sulphite waste liquor was used as an intermediate wash in two stage high density bleaching with hypochlorite, as is shown in Table 6.

TABLE 6

Sample Number	Bleach powder added in first stage, per cent	Intermediate treatment	Bleach powder added in second stage, per cent	Total bleach powder added, per cent	Color of bleached pulp
H_1	4.5	None	3	7.5	Slightly yellow
L_1	4.5	Warm sulfite waste liquor	3	7.5	Nearly as good as H_2
H_2	4.5	None	4.5	9	White
L_2	4.5	Warm sulfite waste liquor	4.5	9	Good white

Pulp used, Ritter-Kellner easy-bleaching. Consistence: first stage, 18 per cent; second stage, 5 per cent.

Evidently with the pulp which has been partially bleached with chlorine water, the treatment with SO_2 results simply in a reduction which decolorizes the chlorinated substances. On the other hand, with the hypochlorite bleach, the incrustants, have been more completely separated and already partially oxidised and so are removed more readily by SO_2. Pulps treated in this way show no great differences in color, perhaps because the washing is accompanied by certain difficulties. Much better action is obtained when alkalies are used to remove the colored substances formed by the chlorine-water treatment.

We have carried out a series of bleaching experiments under various conditions as shown in Tables 7—11. With the chlorine-water preliminary bleach, the following treatment was used.

Well de-fibered pulp was treated with dilute alkali solution, with or without the addition of bleach powder, for periods of 5 to 60 minutes, either warm or cold. After pressing out the alkaline liquid the pulp was thoroughly washed on a screen. The well washed pulp was then brought into a large flask with a ground glass stopper, a measured amount of chlorine water added, and the whole well mixed by shaking. The end of the preliminary bleach was determined roughly by the reduction in the chlorine odor, accurately by moistening KI-starch paper with the bleach liquor, to which a small amount of calcium acetate solution had been added. Without this addition of calcium acetate the paper is still colored long after the chlorine is all consumed. The partly bleached pulp was again washed on the screen, and after partially pressing out, was extracted with either warm or cold alkali to which bleaching powder might also be added. After an alkaline treatment of 15-30 minutes it was again thoroughly washed. The final bleaching was carried out with bleaching powder in open beakers, at 30-40°C. with occasional stirring.

A preliminary bleaching with hypochlorite at low consistence was carried out for purposes of comparison. This was done in an open beaker, with occasional stirring. A preliminary bleaching with hypochlorite at high consistence was carried out in a large porcelain mortar. The well defibered pulp, at about 30 per cent dry weight, was thoroughly mixed with dilute hypochlorite solution with the aid of a pestle and strong glass rod. This method of bleaching at high consistence is perfectly satisfactory for small samples. The bleached pulp was well washed, and portions of the washed pulp partially dried by weak suction on a Buchner funnel. The sheets thus obtained were air-dried and utilized for chemical tests. Sheets were formed from a portion of the remainder, which after drying on a cylinder were used for color comparison.

The colors of the bleached pulps were compared by many observations with the unaided eye. We have also tried measuring the color with the Pulfrich-Zeiss stage colorimeter, using three complimentary color filters.[8] Such measurements cannot be considered as accurate, because of the rather large errors of observation. We have found ultraviolet light to offer a much better means for the determination of the purity and color of the bleached pulp.

Pure cellulose (filter paper, purified surgical cotton) gives a pure blue-violet fluorescence in ultraviolet light. As the purity decreases the color changes through green-gray and yellow-gray to brown. These color changes can be determined very well either with the eye alone or photographically. In photographic work it is recommended that a quinine filter be used to prevent the action of the ultraviolet light on the plate. Any ordinary hard reproduction plate is wholly satisfactory for use here. In this way very small differences in the purity of the samples tested

[8] These experiments and the determinations of purity by the help of ultraviolet light were carried out at the Institute for Scientific Photography at the Bohemian University at Prague.

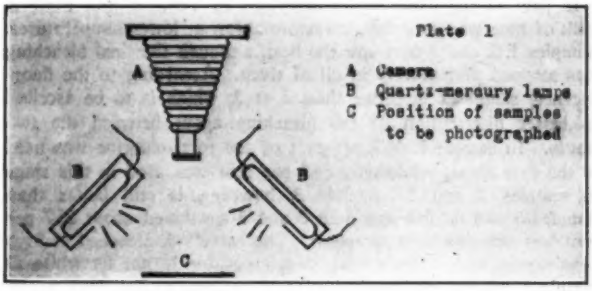
TABLE 7

Sample Number	First Extraction: Bleach powder, per cent	First Extraction: NaOH, per cent	First Extraction: Consistence, per cent	First Extraction: Temperature, deg. C.	First Extraction: Time, minutes	First Stage Bleaching: Chlorine used, calculated as bleach powder, per cent[1]	First Stage Bleaching: Consistence, per cent	First Stage Bleaching: Temperature, deg. C.	First Stage Bleaching: Time, minutes	Second Extraction: Bleach powder, per cent	Second Extraction: NaOH, per cent	Second Extraction: Consistence, per cent	Second Extraction: Temperature, deg. C.	Second Extraction: Time, minutes	Second Stage Bleaching: Bleach powder, per cent	Second Stage Bleaching: Consistence, per cent	Second Stage Bleaching: Temperature, deg. C.	Second Stage Bleaching: Time, hours	Total chlorine used, as bleach powder, per cent	Color of bleached pulp	Alpha cellulose
1	1	0.8	5	50	45	10	5	15	20	not extracted					6	5	35	4	17	Poor white	86.7
2	1	0.8	5	50	45	10	5	15	20	½	0.8	5	50	10	5½	5	35	8	17	Very good	86.4
3	1	0.8	5	50	45	10	5	15	20	—	0.8	5	50	10	6	5	35	8	17	Very good	86.4
4	not extracted					8½	17	25	75	not extracted					8½	5	35	3	17	Gray	86.7
5	not extracted					13	17	20	72	not extracted					9	5	35	6.8	22	Better than 1	85.8

[1] Samples 1 to 3 treated in the first stage with chlorine water, 4 and 5 with bleaching powder.

Pulp used, Ritter-Kellner strong, cooked for bond.

may be recognized, as can be seen in Plates 2—6. It is evident that these differences might be designated on a numerical scale. This however is outside the scope of the present work. Two Hanau quartz lamps were used for lighting, with the arrangements shown in Plate 1.



Bleaching Experiments

Table 7 and Plate 2 give the details of 5 experiments carried out with and without the preliminary bleaching with chlorine water. Sample 2 and 3 show a better color, though bleached with 23 per cent less chlorine (based on the total chlorine requirement) than sample 5, which was bleached at high consistence. Sample 1 was given an alkaline treatment before bleaching only, and even so is very nearly as white as sample 5, both by direct observation and fluoresence. The differences between samples 2, 3 and 4 are very marked, although all were bleached with the same amount of chlorine. Addition of bleaching powder in the intermediate extraction (sample 2) has no particular advantage, as can be seen by comparison with sample 3, which was given an intermediate alkaline extraction without the addition of bleaching powder. It should be noted that the saving in chlorine found in samples 2 and 3 can be still further increased by proper distribution of the bleach requirement between the two stages. In these bleaches only 59 per cent of the total chlorine was used in the first stage, whereas later experience has shown that the optimum amount is around 80 per cent. The time of the final stage is longest with samples 2 and 3. The time generally is directly related to the whiteness and purity obtained in the bleached pulp, as is evident from Plate 2.

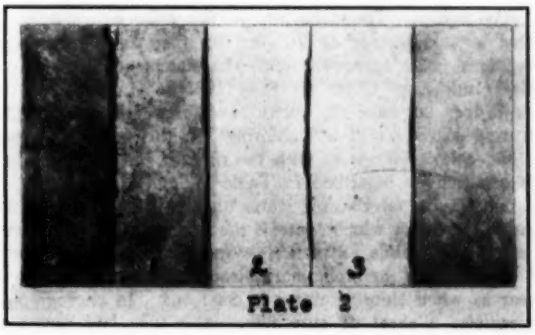


Plate 2

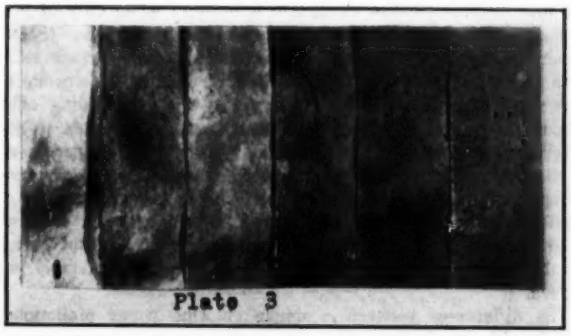


Plate 3

TABLE 8

Sample Number	First Extraction: Bleach powder, per cent	First Extraction: NaOH, per cent	First Extraction: Consistence, per cent	First Extraction: Temperature, deg. C.	First Extraction: Time, minutes	First Stage Bleaching: Chlorine used, calculated as bleach powder, per cent[1]	First Stage Bleaching: Consistence, per cent	First Stage Bleaching: Temperature, deg. C.	First Stage Bleaching: Time, minutes	Second Extraction: Bleach powder, per cent	Second Extraction: Alkali, per cent[2]	Second Extraction: Consistence, per cent	Second Extraction: Temperature, deg. C.	Second Extraction: Time, minutes	Second Stage Bleaching: Bleach powder, per cent	Second Stage Bleaching: Consistence, per cent	Second Stage Bleaching: Temperature, deg. C.	Second Stage Bleaching: Time, hours[3]	Total chlorine used, calculated as bleach powder, per cent	Color	Corrected copper number	Alpha cellulose, per cent
1	—	1	5	35	15	7	5	15	30		0.8	5	35	30	4	5	35	13	11	Very white	2.00	86.76
2	1	1	5	40	15	6	5	15	30	3/16	1.0	5	35	30	3⅛	5	35	13	11	Same	1.90	87.01
3	1	1	5	35	15	6	5	15	30	3/16	0.8	5	35	30	3⅛	5	35	13	11	Same	1.95	87.31
4	1	1	5	35	15	6½	5	15	30	not extracted					4½	5	35	10½	12	Fair	2.16	86.87
5	not extracted					8	17	20	75	not extracted					6	5	35	8¼	14	Trace of yellow	1.98	86.91
6	not extracted					8	5	35	90	not extracted					7	5	35	10	15	Trace of yellow	2.05	86.30

[1] Samples 1 to 4 bleached in the first stage with chlorine water, 5 and 6 with bleach powder.
[2] Samples 1 and 3 treated with NaOH, sample 2 with $Ca(OH)_2$.
[3] Bleach not completely exhausted in samples 1, 2 and 3.

Pulp used, normal Ritter-Kellner.

TABLE 9

Sample No.	Alkali used in second extraction: Per cent	Alkali used in second extraction: Kind	Second stage bleaching time hours	Color of bleached pulp	Alpha-cellulose Per cent	Corrected copper number
1	0.25	NaOH	8	Slightly darker than others	88.0	1.62
2	1.0	NaOH	10	Samples 2 to 6	87.7	1.62
3	2.0	NaOH	10¼	all nearly the	87.7	1.67
4	0.2	NaOH	9	same color, very	88.1	1.62
	0.8	$Ca(OH)_2$		White		
5	1.0	$Ca(OH)_2$	9¼		88.0	1.67
6	2.0	$Ca(OH)_2$	10		87.9	1.63

Conditions listed below were maintained the same for all samples.

	First Extraction	First Stage Bleach	Second Extraction	Second Stage Bleach
Consistence	5 per cent	5 per cent	5 per cent	5 per cent
Temperature	35 deg. C.	10 deg. C.	20 deg. C.	35 deg. C.
$Ca(OH)_2$	1 per cent	.....	.....	.....
Chlorine calculated as bleach powder	.....	7½ per cent	.....	.....
Bleach powder	.....	.....	.....	2½ per cent
Time	30 min.	45 min.	20 min.	.....

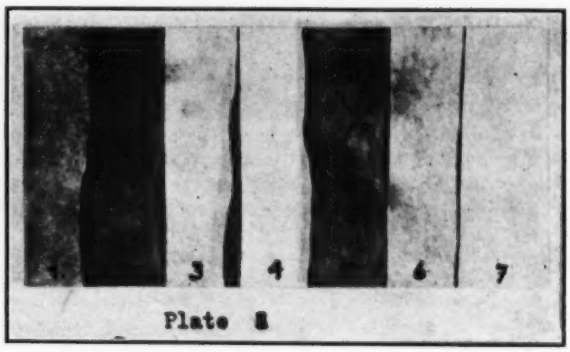


Plate 5

In part of the experiments described in Table 8, and Plate 3, milk of lime was used for extracting agent, at lower temperatures. Samples 1, 2 and 3 here are the best, although the final bleaching was stopped prematurely in all of them. According to the fluorescence, sample 1 is better than 2 or 3, which is to be ascribed to better distribution of the bleaching agent between the two stages. In sample 1, 63.5 per cent of the total chlorine was used in the first stage, while only 54.5 per cent was used in this stage in samples 2 and 3. Sample 2, however, is still better than samples 5 and 6, although both 2 and 5 consumed about 26.7 per cent less chlorine than sample 6. The sample 5, bleached at high consistence with 14 per cent bleach powder is not as white as sample 6, which was bleached with 15 per cent at low consistence. It appears that the saving of bleach by the use of high consistence is not very large, as was also observed in other experiments not here reported. The time of the final bleaching agrees with the color and purity of the bleached pulp.

In the experiments, the results of which are recorded in Table 9, and Plate 4, only the conditions of the intermediate wash were varied. According to the appearance and fluorescence, the differences in color and purity of the bleached pulps are very small. It is of interest to note that the color of the waste liquors after the intermediate alkaline extraction is brighter when milk of lime is used than when NaOH is the extraction agent. Also the intensity of the color decreases with increasing alkali concentration, both in the case of $Ca(OH)_2$ and NaOH. In this last group of experiments the same pulp was used as in the preceding ones. About 1 per cent less bleaching powder was used than in the other experiments, and the proportion of the total chlorine used in the preliminary bleach was increased from 63.5 to 75 per cent. In spite of this the same color was obtained as in sample 1 of Table 8. The saving of chlorine with production of a better color was 33 per cent compared with sample 6 of that series. At the same time the chemical quality has been considerably improved.

The differences between a simple chlorine water preliminary bleach without alkaline treatment, and the same sort of bleach with preliminary and intermediate extraction, are evident from Table 10 and Plate 5. Here again the best color is found in those samples which were given two alkaline treatments. Sample 4 shows up somewhat better in ultraviolet light than sample 3. These two samples were bleached with 82 and 72.5 per cent respectively of the total chlorine in the first stage. To the unaided eye sample 2 appeared to have almost exactly the same color as sample 6. In ultraviolet light, however, they differ noticeably. Evidently a better color could have been obtained both in samples 2 and 1 if a larger proportion of the total bleach had been used in the second stage.

Alkali was added to sample 7 in the preliminary bleach, because it had been observed that pulps bleached in this way gave a better color. This practice is confirmed by a few patents on the subject. We have to do here evidently with a better dissolving out of the separated incrustants.

Pulp bleached with the addition of alkali in both stages shows a distinctive bright white fluorescence, entirely different from that shown by pulps bleached either by the present method, or in the ordinary way with hypochlorite. This is not, as might be supposed, an indication of especial purity; nitrocellulose prepared from such a pulp has a yellow-brown tint, while that prepared from the same pulp after bleaching by the chlorine-water method is a good white. The behavior of the pulp bleached in the presence of alkali must be ascribed to a special effect on the alkali. This is in agreement with the statements of Gray and Staud. (Ind. Eng. Chem. *19* 854 (1927)). In spite of this, sample 7 does not have the purity or color of samples 3 and 4, which used 26.6 per cent less chlorine. In this group of experiments the color also agrees with the time of the final bleaching.

The experiments described in Table 11, and Plate 6, are evidence that the use of chlorine water, that is, the increased chlorination, is the factor which controls the saving in bleaching agent. The effect of alkaline extraction is indeed evident when hypochlorite is used for the preliminary bleach but it is far from being as great as when chlorine water is employed. In photographing these samples a sheet of pure filter paper was laid across the sample sheets, which makes the differences in purity of the pulps stand out very well. Sample 4 is nearly as pure as the filter paper.

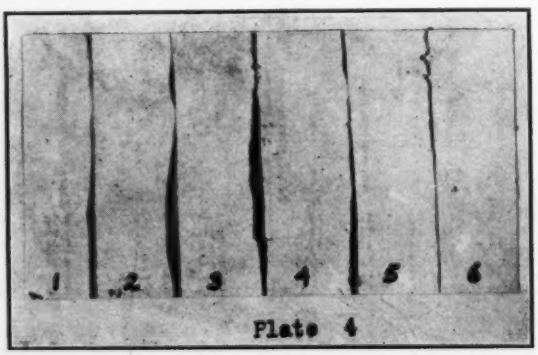


Plate 4

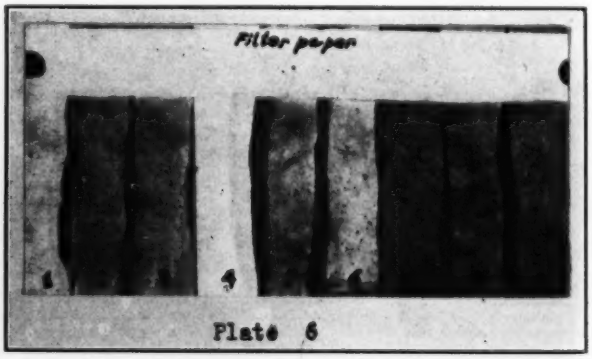


Plate 6

TABLE 10

Sample Number	First Extraction: Consistence, per cent	First Extraction: Temperature, deg. C.	First Extraction: NaOH added, per cent	First Extraction: Time, minutes	First Stage Bleaching: Chlorine used, calculated as bleach powder, per cent[1]	First Stage Bleaching: Consistence, per cent	First Stage Bleaching: Temperature, deg. C.	First Stage Bleaching: Time, minutes	Second Extraction: Consistence, per cent	Second Extraction: Temperature, deg. C.	Second Extraction: NaOH added, per cent	Second Extraction: Time, minutes	Second Stage Bleaching: Bleach powder, per cent	Second Stage Bleaching: Consistence, per cent	Second Stage Bleaching: Temperature, deg. C.	Second Stage Bleaching: Time, hours	Total chlorine used, calculated as bleach powder, per cent	Color of the bleached pulp	Alpha cellulose, per cent	Corrected copper number
1		not extracted			8	15	5	20	5	35	1	15	3	5	35	5½	11	Slightly brown	87.2	1.79
2	"	"	1	"	"	15	5	20	not extracted				3	5	35	3½	11	Better than 2 and 6	87.6	1.64
3	5	35	1	15	8	15	5	20	5	35	1	15	3	5	35	7½	11	These two samples	87.3	1.75
4	5	35	1	15	9	15	5	25	5	35	1	15	3	5	35	7½	11	very good white	87.5	1.70
5		not extracted			8	15	5	20	not extracted				3	5	35	2	11	Brown	87.5	1.84
6		not extracted			10	20	17	90	not extracted				3	5	35	2½	13	Slightly yellow	86.7	1.84
7		not extracted			10[2]	20	17	130	not extracted				5	5	35	2¼	15	White	87.4	1.82

[1] Samples 1 to 5 bleached in this stage with chlorine water, samples 6 and 7 with bleach powder.
[2] 1 per cent NaOH added to this sample with the bleach.

From Plate 5 we can also see that the sample treated with bleaching powder at low consistence and then extracted shows no especial differences from the sample bleached at high consistence and extracted in the same way. Double extraction gives the best results.

The color of the waste liquor from the intermediate alkaline extraction is a dark reddish brown, after a chlorine water bleach, as in samples 1 and 4, Table 10. It is somewhat brighter if the preliminary bleach is made with hypochlorite at low consistence (samples 2 and 5) than at high consistence (samples 3 and 6). In every case it is much brighter after the hypochlorite bleach than after the chlorine water bleach. The color of the half-bleached stock shows an analogous behavior.

According to this the color of the waste liquor and the pulp stands in good agreement with the degree of chlorination. The high consistence bleach forms as it were an intermediate stage between the chlorine-water and the low consistence bleacnes. It is certain that when bleaching at high consistence a more intensive splitting off of incrustants occurs, as a result of the increased chlorination. Since the oxidizing action here is less than at low consistence, the colored substances formed consume less chlorine for their own oxidation than in low consistence bleaching. One must not forget that the colored substances formed when bleaching under highly chlorinating conditions can be only incompletely removed with water alone. These difficultly soluble substances remain fixed on and in the fibers after the intermediate washing, and in the subsequent final bleaching consume a certain amount of chlorine for their own oxidation. This is most evident in the straight chlorine-water bleach, when the pulp still remains brownish in spite of an excess of chlorine.

According to this, one should not expect large savings in bleaching agent from a high consistence bleach without intermediate extraction. It might be that a bleach at high consistence with an alkaline extraction or other treatment to remove the difficultly soluble substances formed, would give as good results as our process. That this is not the case may be shown by the following simple experiment:

The dark liquor from the preliminary chlorine-water bleach is neutralized. A part of this is then treated with an excess of chlorine water, and another part with a small quantity of hypochlorite solution. The part treated with chlorine water is decolorized very slowly and incompletely, while that treated with bleaching powder soon becomes almost colorless.

From this it appears that the colored substances are much less readily oxidized in acid solution than in neutral or weakly alkaline solution. Since the latter condition exists in an ordinary (hypochlorite) bleach at high or low consistence, the chlorine consumption must be higher for this than for a chlorine-water bleach, since in the latter case, less chlorine will be used for oxidation (due to the relative slowness of the oxidising reaction).

Again the effect of the preliminary chlorine-water bleach evidently depends to a great extent upon the completeness of the extraction. For instance, the washings or extractions may be made more efficient by the use of wetting agents, and assisted by appropriate mechanical stirring. By the above method very good results may also be obtained by simply making alkaline after the preliminary bleaching, without washing.

The chemical characteristics of the pulps bleached by our method may be described as very good. In comparison with the hypochlorite bleach at high or low consistence the alpha- cellulose content is as high or higher, and the copper number as small or generally smaller, though the pulp is more thoroughly bleached. The product bleached in this way is especially suitable for a further chemical treatment, or for purposes where good color, purity and high strength are desirable.

TABLE 11

Sample Number	First Extraction: Consistence, per cent	First Extraction: Temperature, deg. C.	First Extraction: NaOH added, per cent	First Extraction: Time, minutes	First Stage Bleaching: Chlorine used, calculated as bleach powder, per cent[1]	First Stage Bleaching: Consistence, per cent	First Stage Bleaching: Temperature, deg. C.	First Stage Bleaching: Time, minutes	Second Extraction: Consistence, per cent	Second Extraction: Temperature, deg. C.	Second Extraction: NaOH added, per cent	Second Extraction: Time, minutes	Second Stage Bleaching: Bleach powder, per cent	Second Stage Bleaching: Consistence, per cent	Second Stage Bleaching: Temperature, deg. C.	Second Stage Bleaching: Time, hours	Total chlorine used, calculated as bleach powder, per cent	Color of bleached pulp	Alpha cellulose, per cent	Corrected copper number
1		not extracted			8	5	15	30	5	35	1	20	3	5	35	5¼	11	White	87.2	1.61
2		not extracted			8	5	35	70	5	35	1	20	3	5	35	5½	11	Samples 2 and 3 better than	86.8	1.56
3		not extracted			8	17	20	50	5	35	1	20	3	5	35	5½	11	8 & 9, worse than 5 & 6	86.8	1.62
4	5	35	1	20	8	5	15	30	5	35	1	20	3	5	35	6½	11	Very good white	87.2	1.67
5	5	35	1	20	8	5	35	100	5	35	1	20	3	5	35	6¼	11	Samples 5 & 6 better than	86.7	1.67
6	5	35	1	20	8	17	20	95	5	35	1	20	3	5	35	6¼	11	2 & 3, worse than 1	86.9	1.67
7	5	35	1	20	8	5	15	30	not extracted				3	5	35	2¼	11	Very poor, brownish	87.3	1.79
8	5	35	1	20	8	5	35	100	not extracted				3	5	35	5	11	Yellowish	87.0	1.63
9	5	35	1	20	8	17	20	95	not extracted				3	5	35	4¼	11	Like 8	86.9	1.65

[1] Samples 1, 4 and 7 bleached in the first stage with chlorine water, the others with bleach powder.

Pulp used, normal Ritter-Kellner.

In experiments where the chlorine water treatment was used without subsequent extraction, or especially where no alkaline treatment whatever was used, a small increase of copper number always occurred, comparable with that produced in a hypochlorite bleach with the same amount of active chlorine. It is difficult to assume, however, that this increase in copper number accompanies the use of chlorine water, the oxycellulose thus formed being removed by the alkaline extraction. It is much more probable that the incrustants already partly altered by the chlorine water are incompletely removed by an intermediate wash without alkali. Part of these incrustants may go through the final bleaching, and their presence in the bleached pulp is the most probable cause of the increase in copper number.

The following facts point to the correctness of this assumption:

1. Chlorine water has a smaller oxidizing effect than hypochlorite solution and the chlorinated substances formed in bleaching with chlorine water are difficultly soluble.

2. In spite of the increase in copper number the alpha-cellulose content is not affected in the least, as it probably would be by a more intensive oxidation of the cellulose.

3. A completely bleached pulp which is bleached with chlorine water without any preliminary alkaline treatment, shows a higher copper number than one which has been given such a treatment. In the latter case, the preliminary extraction removes a part of those substances which would otherwise be retained in the bleached pulp and increase its copper number.

From these considerations, we may separate the total corrected copper number of a bleached pulp into the copper number of the oxycellulose and the copper number of the incrustants.

For the purpose of comparing the yield of bleached pulp obtained by the two methods, a series of tests was carried out in which an easy bleaching and a hard bleaching pulp were bleached by the chlorine-water method, and by the usual two-stage low-consistence method. The bleached pulps were also treated with 2.5 per cent acetic acid for 24 hours, to determine the amount of carbonates and other substances soluble in weak acid.

The results obtained are shown in Tables 12 and 13. It is apparent that pulps of higher color and purity, and in equally high yields, can be produced by the chlorine water method. It is interesting to note that the acid-soluble substances are highest in the pulp bleached with the addition of alkali, and lowest in that on which chlorine-water was used.

These experiments, in connection with the chemical analyses of pulps already made, show clearly that bleaching with chlorine water in the manner described does not cause excessive chemical deterioration of the pulp.

[6] This process has been made the basis of patent applications.

TABLE 12

	First extraction		First stage bleach		Second extraction		Second stage bleach				
Sample	Chemical	Per cent	Chemical	Per cent	Chemical	Per cent	Chemical	Per cent	Total bleach powder used, per cent	Bleaching loss, per cent	Loss after bleaching and acid treatment, per cent
1	none		Bleach powder	6.5	none		Bleach powder	1.0	7.5	1.70	2.17
2	none		do	7.0	none		do.	1.5	8.5	1.89	2.26
3	NaOH	1.0	Chlorine water	5.0[1]	NaOH	1.0	do.	1.0	6.0	2.17	2.26
4	NaOH	1.0	do.	5.5[1]	NaOH	1.0	do.	1.5	7.0	2.45	3.11
5	none		Bleach powder	6.0	none		do.	1.0	7.0	0.47	1.98
6	none		do.	7.0	none		do.	1.0	8.0	1.13	3.10
			NaOH	1.0			NaOH	0.5			

[1] Calculated as bleach powder.
Pulp used, Ritter-Kellner easy-bleaching: consistence, 5 per cent; temperature, samples 3 and 4, first stage, 15 deg. C., all others 35 deg. C.

TABLE 13

	First extraction		First stage bleach		Second extraction		Second stage bleach				
Sample	Chemical	Per cent	Chemical	Per cent	Chemical	Per cent	Chemical	Per cent	Total bleach powder used, per cent	Bleaching loss, per cent	Loss after bleaching and acid treatment, per cent
1	none		Bleach powder	11.0	none		Bleach powder	6.0	17.0	2.40	4.62
			NaOH	1.0			NaOH	1.0			
2	none		Bleach powder	12.0	none		Bleach powder	7.0	19.0	2.42	4.43
3	none		do.	13.0	none		do.	7.0	20.0	3.06	4.53
4	NaOH	1.0	Chlorine water	10.0[1]	NaOH	1.0	do.	3.0	13.0	4.47	4.71
5	NaOH	1.0	do.	10.5[1]	NaOH	1.0	do.	3.0	13.5	4.80	4.98

[1] Calculated as bleach powder.
Pulp used, Ritter-Kellner hard-bleaching: consistence, 5 per cent; temperature, samples 4 and 5, first stage, 15 deg. C., all others 35 deg. C.

By the use of the bleaching process described,[6] namely a preliminary extraction with alkali, partial bleaching at low consistence with chlorine water, second extraction with alkali, and final bleaching with hypochlorite, savings of as much as 30 per cent of chlorine may be obtained. At the same time the purity of the product is higher than it is possible to obtain in bleaching at high consistence. It is possible also to obtain an excellent and very permanent white with hard, difficultly bleachable, pulps.

When 70 to 90 per cent of the total chlorine is used as chlorine water in the first stage the bleaching time is short—one hour at most. Thus it is a very simple matter to carry out the first stage of bleaching, with the preliminary and intermediate extractions, as a continuous process. The bleaching in the first stage goes on with sufficient rapidity at low (5 per cent) consistence, which greatly simplifies the mechanical details of development. The first stage of the bleaching and the two extractions may be successfully carried out in the cold, so the application of heat is saved. The expense for chemicals for the extraction is very small, for milk of lime can be used entirely.

As for the quality, yield, color, and purity of the bleached pulp, the method above described can compete with any hypochlorite bleaching processes in practical operation today.

Paper Board Deckles

SPECIAL INQUIRY NO. 117

A member writes: "What success is being had by board mills running from five to seven cylinders with the shower deckles? I realize that there can be a saving in liner stock by deckling in, but what are the disadvantages? How long does it take to make a change Are there any after effects getting the deckle to line up properly, eliminating breaks because of bad deckle edges? Is there any tendency of the sheet to break on the driers or crack out of calender where the sheet is narrower than the usual trim?"

All who contribute information to this inquiry will receive a copy of the replies, in blank, when the report is issued.

R. G. Macdonald, Sec., Tappi
18 East 41st street, New York.

Wants to Use Waste Products Paper

Senator Schall of Minnesota has introduced a resolution in the Upper House of Congress directing the printing of the Congressional Record on paper made from the waste products of farm field crops. Under the proposal corn stalks, rice, wheat or flax straw or sugar cane pulp would be utilized in making paper for the Record. The resolution has been referred to the Senate Committee on Printing.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

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THE AMERICAN PAPER AND PULP ASSOCIATION

Edited by
THOS. J. BURKE, C. A., Sec.-Treas.

Sales Cost Accounting*

By Henry S. Dennison, President, Dennison Mfg. Co.

A recent meeting of the store managers' section of the National Retail Dry Goods Association devoted a two-day session to talks upon the possibilities of analysis and refinement in the methods of carrying on retail stores—in short, to talks upon scientific management in retailing. This is highly significant and to whatever degree it proves successful it will open a new field of opportunity to the profession of cost accounting, since, of course, analysis of operations and standardization of methods go hand in hand with costing. My own part in this session was to emphasize that the analytic study of time and of movement was as profitably applicable to selling as we now know it to be to manufacturing, and that no matter how impossible or impracticable it might seem to store managers of today, it can seem to them no more impractical than it did to the factory managers of thirty and forty years ago. I ended my statement with a reference to the critical place which costing has held in manufacturing progress, and said that I believed it was bound to hold an equally important place in retailing It is with this statement that I want to start here, and discuss not retail costing alone but costing in the total field of sales cost accounting, which in itself is a part of the wider and still less explored field of marketing costs.

Need for Cost Accounting

It would be a waste of time for me to dwell before this society upon the tremendous present need for such help as cost accounting and methods analysis can give to the technique of marketing. At a most conservative estimate we are spending fifteen billions a year in marketing and that amount is increasing rapidly; and all of us know that not one-fiftieth of the analytical study which has been given to processes of manufacturing has ever been devoted to the processes of marketing.

Difficulties Involved

And I hope it is equally needless for me to emphasize to this company the difficulties involved. They are well set forth in the following letter from a retailer:

1—*Labor*: "It would be necessary to prorate rather than directly compute, the labor of buying, listing, ordering, supervising sales, etc. The only labor expense which could be directly measured would be sales labor. Each salewoman in the store has from 50 to 300 items which she sells. To allocate her salary to individual items which she sold, it would be necessary for us to keep track of her time by items over a long period of time. A sampling showing the distribution of her time by items would be unreliable because the volume of sales for each item varies with such factors as:

"Season of year
Day of month
Day of week
Time of day
Weather
Individual city
Type of customer
Size and location of store
Advertising, institutional and specific
Caliber of saleswoman
Transportation conditions
Window displays
Position on counter
Amount of space assigned on counter

"On the whole, it seems to me, that for a business like ours, it would be impracticable to try to allocate labor expense by items."

2—*Space*: "We would allocate the proportion of rent to one counter in one store. By measuring the physical space occupied by one item, for a given length of time, we could determine the rent chargeable against that item. By discovering the quantity sold in a given length of time, we could determine the average rent for each unit sold. It would probably be useful to this company to have such a study of space made. However, it would necessitate some elaborate records which we do not now keep.

"We have no accurate records of actual sales or stock in the stores by individual items, so it would be necessary to install an expensive record-keeping system for sales and stock of each item studied. Perhaps the practical results would not be much more useful than principles which are already known, such as the fact that the rental expense of an item is directly proportionate to the number of square feet occupied on the counter, and that the rental expense of an item is inversely proportionate to the rate of stock turnover."

The Point of the Matter

These difficulties are very real indeed but very like the old difficulties which faced us when we first dreamed of getting detailed and itemized costs in manufacturing. Costs of production have been expensive items of knowledge, and difficult to get, but the point of the matter is, that it has been possible to use them so that they have been worth all they cost and more. Costs in the field of marketing will be more difficult and more expensive and when well used will be just as well worth their costs. And as to difficulties in general, it is worth remembering that never yet has a single important difficulty been overcome until someone who did

* National Association of Cost Accountants' Bulletin.

not know just how he was going to do it nevertheless bet that he could and started to work at it. With due acknowledgment of the difficulties, therefore, I will make a beginning, if I can, of seeing just what the problems in sales costing are.

First, in classifying just what is meant by costs, I find it again and again important to dwell upon the difference between costs and expenses—between cost accounting and expense accounting. The difference is obvious enough but is continually forgotten. Expense accounting arranges its figures primarily with reference to what or to whom money has been paid. Cost accounting arranges its figures primarily with reference to the utlimate purpose or goal towards which it was spent. One might say roughly that expense accounting concerns itself with the "means", and cost accounting with the "ends". Both, of course, are useful, but each serves a quite different list of uses. The expense accounting of our tag division keeps us in touch with the most important directions in which money is spent there, and by yearly or monthly comparisons gives us certain warnings. Cost accounting tells what this, that or the other particular sort of tag or process can be said to cost. It guides us in considering market prices and structure of goods and may be so constructed as to help in detailed improvements of methods of manufacture. But if we should mix the two kinds of accounting and divide total expenses by total thousands of production, we should have an almost meaningless average which, if considered and used as a cost, would lead us into fatal difficulties.

Yet this is just exactly what has been done with the expenses accruing to a business after production. Expenses have been divided by the one figure of dollars invoiced, and the resulting percentage, which averages together cats and dogs, tulips and paving stones, has been consciously and unconsciously treated as if it were a cost. This very fact will make is doubly difficult to get cost accounting established in the field of marketing. But I believe it self-evident that expense accounting in this field has given us about all that it can give and that to make the further progress we must make, it is to cost accounting we must look for help.

No Such Things as Absolute Costs

In this new field for costing it will be necessary to start at the very beginning with the understanding that there are no such things as *absolute* costs, that *all* costs are *relative*, that there are as many costs of a service or of an article as there are purposes you choose to relate it to. Just as there are in pure mathematics dozens of different forms which may nevertheless express an identical curve or plane; so there may be dozens of costs relating to a single article, each of them correct within the frame of reference chosen for it.

This is true of both manufacturing and marketing costs, but so far manufacturing has afforded us only slight occasion to worry about it. When capacity has been pretty fully utilized, costs strictly within the factory walls demand few changes of points of view, few if any changes of frames or reference. To be sure, depreciation and other slow changing and partially arbitrary elements of cost seldom really belong in the typical inside-the-factory frame, but they used to be relatively unimportant as against direct costs so that it was practical to squeeze them in almost anyhow. Notoriously these relatively fixed overheads have been the weakest, and most seriously questioned part of manufacturing costs. Here and there in production some important by-products have caused thought to be given to joint cost problems insoluble within the regular frame; but up to 1920, during the most important twenty years of the early life of cost accounting, there was little need to consider factory costs from more than a single point of view. They have come, therefore, to be thought of as absolute.

Old Questions in Practical Forms

But 1921 opened the subject wider and old theoretical questions arose in fresh, practical forms. "What is the cost when out-put fluctuates and equipment is fixed?" "As the relation of demand to capacity changes widely, what are least-loss prices and what are profit-prices?" Violent shifts in business structures are given cogency to J. M. Clark's thesis in his "Economics of Overhead Cost." To illustrate his point, he raises these nine questions, to answer which costs would have to be figured in nine different ways:

1—Is a new plant economically justified?
2—How large an addition should be built to our plant?
3—Is a proposed change in method economical?
4—What income is available for dividends?
5—How cheaply will it pay to sell goods?
6—How deep shall we cut to meet keen competition?
7—Shall we shut down during depressions or run stock?
8—Shall we introduce a proposed side line?
9—Shall we abandon our plant and liquidate?

The job of finding marketing costs can in one sense be compared to finding costs in a factory whose output is always below the capacity of its overhead. Mr. Freeman made it clear at your Atlantic City meeting nearly two years ago, that sales costing will have much to contribute to the theory of marginal costs, which are, obviously relative costs. Sales costing, therefore, should broaden and make truer all our fundamental conceptions of costs and in due time force us to make needed improvements even in the technique of production costing.

In all of sales costing, at any rate, we shall expect to see our costs as functional, marginal, relative. The first questions will always be, "What are the uses to which they are to be put?" "To what purposes are we to relate them?"

Some of the Principal Purposes

What are some of the principal purposes to which marketing costs will be put? In other words, what specific things can marketing costs be expected to help us accomplish? As in manufacturing, we can expect significant costs in marketing to direct attention of the management toward the most important places in which to attempt to save wastes in material and in time, and toward the elimination of unprofitable merchandise, materials, and motions. A few actual examples of such costing and the particular attempts at economy, which they were to serve, Mr. Freeman's paper described in some detail; cost of warehousing per cubic inch of merchandise; cost of clerical work per sales order; cost of salesman-hour; cost of salesman-mile; selling cost by customer classification; selling cost by merchandise classification....and a few more of the tentative excursions into the field of marketing costing which our own concern has made.

Obviously, for convenience in making effective use of its costs, the whole field of marketing will divide itself up into such sections as warehousing, manufacturers' selling, advertising, jobbers' selling, sales accounting, and retailing. While each section will have its own special problems, there will be few so special that the solving of them will not point out or suggest the way of solution for problems in other sections.

An Interesting Example

The Department of Commerce has issued, or will soon issue, an interesting example of cost accounting carried out by the jobber. The quotation is taken from "Analyzing Wholesale Distribution Costs", by J. W. Millard.

"There seems to have been a general opinion that if the sales volume can be boosted each year some unknown factor will miraculously provide a return in excess of the expense, regardless of the relation between cost and selling price of individual items.

"Total cost (per cent gross sales) ranges from $19.19 on Pyrex ware down to $10.82 on Nails.

"A rough approximation of the cost of each sales visit indicated that accounts which did not show purchases totalling $600 per year were decidedly unprofitable.

"The 1,432 retail accounts were carefully measured against this yardstick and a drastic movement decided upon. Nearly half of the accounts fell into the category of unprofitable business. The situation was explained to the retailers and over night 700 ac-

counts were taken from the books. The elimination of these accounts reduced the sales territory about 33 per cent. This restriction of sales territory coupled with a reduction in items carried of 30 per cent decreased the volumes of sales 33 per cent. The eliminated products included such heavy items as lead and oil, which ran into a considerable dollar volume but were not profitable. This explains the noticeable effect of the new plan on total sales volume.

"After a three-year operating test in the restricted area with a reduced line it was found that the dollar volume of net profits had increased 35 per cent while the relation of net profits to sales had increased 68 per cent. Operating costs were reduced by 4 per cent of gross sales below the average for similar firms in this particular field.

"An analysis of the cost of handling individual orders in the office made by the Western Electric Company will be of more than passing interest here. This analysis indicated that the expense on small orders—those where the value was less than $25.00—varied from $3.25 to $5.00, while the average gross profit averaged from $0.71 to $4.48. The average amount of loss on these orders was about $1.63, and as such orders represented about 60 per cent of all orders, the aggregate annual loss amounted to more than three-quarters of a million dollars."

Profitable Trading Areas

A recent Wholesalers' Conference in Washington touched upon the growing necessity of the determination of profitable trading areas; of the profitable minimum of size of order; of the economic lot-purchase for the warehouse (this latter you will recognize as corresponding to the classical problem of economic lot-manufacture in the making of parts for assembly).

Some of the other costs which are likely to be called for by the growing needs of marketing management are cost per response for each advertising insertion; total cost of each order taken by jobber's road salesman; total cost of each order taken by jobber's house salesman; clerical costs per order, per customer, or per unit of correspondence; various costs of letters and of follow-ups in the Credit and Claim Department; selling costs per square foot of counter space in retailing; selling costs per square foot of counter space in the front of a store as against similar space at the side or back; variations of costs of selling among different individuals in the sales force; seasonal variations in selling costs; variations dependent upon the day of the week and the hour of the day; and many costs in the non-selling departments of great stores of a nature similar to production costs.

Wide Variety of Costs

This wide variety of costs, some of obvious value, some of exploratory nature, are like the variety of cross sections through which one might make progressive examinations of a living organism. Adding them together will give nothing which has a counterpart in reality. They are partial differentiations of the flowing processes of marketing. If we ever need to or succeed in getting a whole cost of a transaction out of them it will be through the partial integrations of a new kind of calculus.

For the present what particular partial costs we shall choose for study will be determined by the practical tests of most immediate usefulness. Marketing costs must help us advance in the arts of warehousing, refining the far too crude test of bare turnover, disclosing the wastes in handling goods in and out, and giving us a guide to intelligent lot-purchasing.

They must lay bare the true facts of the utilization of the road salesman's time, paving the way to his intelligent routing, equipping, and the setting of a standard performance or quota.

They must push advertising—destined to play an even bigger part in the future—along the road toward carefully analytical engineering attitude which insists upon knowing what it is to do and why, and away from the breathless, planless, and checkless wastes of today.

They must knock out of the heads of merchandisers, big or little, the old-pipe dream that by merely growing in sales they will grow economical, and show that when analysis of method is neglected, to increase sales has almost universally resulted in increasing the percentage rate of sales expense.

They must refine office practices, so that they fit cases and so that sledge hammers are no longer used to drive in push pins; so that credit or correspondence, or recording practices supportable by large orders are not applied to two-dollar orders.

They must show that on the retail floor, as only a few years ago in our factories, certain goods are carrying all the load and others are riding free, and freer than free.

They must try to discover whether certain items have not as definite an inherent cost-to-sell as most items have a cost-to-make.

They must make it obvious that low wage and low costs are connected only through the third vital factor of value of service rendered; and so save retailers from the blunders of wage trimming which have been so costly to some manufacturers.

They must point to stand-by, peak-load, idle-time costs in retailing; to possibilities for such subdivision of function that special fitnesses may be fully utilized upon work worthy of them.

Cost accounting followed mechanical invention. It has today a great opportunity to take the lead, to point the way to the inventions of selling technique for which our time is ripe.

Has Freshened Whole Group

The *accountant* used to be regarded as necessarily a dried up person, very safe and very conservative. The *cost* accountant, bursting forth some thirty years ago from the dry pod of accountancy, has freshened the whole group. It is natural, therefore, to expect of the cost accountants that they will take a pioneer part in the development of their art so that it shall be able to serve in this new field; a field as big in opportunity, I am confident, as was the parent field of production cost accounting when it first was opened up; a field, moreover, which today, on account of the very savings in cost of manufacture which cost accountancy has helped to bring about, is growing hourly in relative importance. There is getting to be little satisfaction in struggling to save a few cents per ton in labor costs, while quarters and half dollars are adding themselves to costs of marketing. It is an allegation too near the truth to be passed over lightly that more than a little of the savings due to scientific management or to mass production have been lost through the necessities which high productivity has put upon us to sell aggressively and through the attempts we have so far made to meet these necessities, with antiquated equipment and with an antiquated point of view, as ill adapted to the new needs of marketing as were the methods and point of view of handicraft to the needs of the modern factories.

Cost accountants and methods analysts must correct the present critical unbalance and, by leading, marketing high above the level of an unreflective, semi-intuitive handicraft, strengthen the whole economic structure and open the paths of wholesome progress.

J. A. Quinlan Attends Traffic Hearing

HARRISVILLE, N. Y., December 31, 1928.—Joseph A. Quinlan, traffic manager of the St. Regis Paper Company, returned this week from New York where he attended a traffic rate hearing for the purpose of protecting Northern New York manufacturing interests. It is understood that some sections of the state are alarmed over the proposed equalization of freight rates in that manufacturing concerns might be influenced to leave the state. A large number of traffic managers representing large concerns throughout the state were present at the meeting which was held in the offices of the Interstate Commerce Commission. Mr. Quinlan stated that Northern New York would not be affected by the proposed equalization but that several cities on the main line would be. The commission is taking the proposed changes under advisement and will hear further arguments in February.

COST SECTION

Material Records and Inventory Planning*

Whether the records pertaining to a business be for an individual, a partnership or an incorporated company, they should always tend toward accuracy, and this can be accomplished if proper planning has been given consideration in the preparation of the records which are to provide the management of the business with information for the facilitation of production and distribution. This is particularly applicable to the subject of inventories of materials and supplies. There is no good reason why the commodities used by a manufacturing institution for the making of its products should not be accounted for in a manner similar to that in which a bank accounts for the commodity which it deals in, namely, money. Materials and supplies to the manufacturer are the same as money to the banker, inasmuch as they have been exchanged for money, and after they have been processed by the manufacturer, they will be again exchanged with the dealer or consumer for money. Accurate and understandable records make it possible to reduce waste account of obsolescence due to style changes and improvements and thus enable the management to guard against unknown losses that may sap the vitality of the business, and play a large part in exhausting the surplus of the business, or adding to an already mounting deficit, which in the end may spell destruction, and add to the chronicles of the mercantile agencies, the recording of another bankruptcy with liabilities far beyond the total of liquidable assets.

Questions and Suggestions

To enable that division of the accounting department having charge of the recording and distribution of materials and supplies to avoid errors, it may be advisable to prepare a sort of questionnaire, which may provide for the accountants of a particular business ideas for improvements of their present systems, or supply the warning for check-up of details that may have been or are now being overlooked in an otherwise good plan for recording income and outgo of materials and supplies. It is for the purpose of enabling interested readers of this article to avoid the pitfalls mentioned at the outset that the following questions and suggestions have been prepared.

First, in relation to the Receiving of Materials and Supplies:

1—Has the Receiving Department been notified by a copy of the Purchase Order, the kind of material to be received, as to specifications, quantity, etc.?

2—Is proper check provided to guard against errors in quantity received as reported by the receiving division?

3—Is provision made for inspection and approval of the material received?

4—Is provision made for quick delivery to proper department or stock room, to avoid excessive handling cost, waste and shortage?

5—Is provision made for verifying, with invoices covering the goods, of expense bills and receiving sheets for freights, discounts, etc.?

6—If material received does not comply with specifications, and by addition of certain labor and processing, it can be made usable, is provision made for notifying and charging the vendor with the additional cost incurred?

7—If quantity received does not agree with quantity invoiced, is method for charging or crediting vendor's account for the amount of the difference?

After all checks have been provided against errors in the receipt of materials and supplies, consideration should be given for similar purpose to the storage, receipt and disbursement of the materials and supplies from the stock or store rooms or warehouses.

For that purpose we propose the following questions:

1—Has provision been made for promptly recording the receipt either on the bin or stock recording card?

2—Has the receipt been correctly added to the amount on hand?

3—Are these records made immediately after the receipt of the goods in stores?

4—Are disbursements recorded immediately after requisition has been filled?

5—When production orders are used, is provision made for proper recording on all stock cards of the materials withdrawn?

Accuracy in the Inventory Record

A clear understanding of the foregoing questions regarding the handling of materials will insure accuracy in the inventory records. While the actual taking of the inventory requires considerable planning, there are certain other important fundamentals that should be given consideration, and these are even more important than the plan and instructions covering the taking of the inventory. These fundamentals revolve around the following questions, from which it is assumed that an adequate cost system has been installed, or that steps are being taken in connection with the inventory planning to provide for it, and these questions will lay the foundation:

1—Has labor been properly classified as to Productive and Non-Productive?

2—Have the material accounts been adequately segregated and classified?

3—Is provision made for control of receipts and disbursements? requisitions, etc.

A—By proper recording of invoices, production order

B—By standard price records of purchase materials.

C—By proper assembly specifications, corrected to date.

D—By standard costs of manufactured parts and completed products.

4—Have standards been set up for Burden?

Require Much Study

Each of the foregoing questions seems simple enough but requires a tremendous amount of study and decision, as they not only provide the foundation on which the Inventory plans are based, but the Inventory itself must give proof of the accuracy or inaccuracy of the results which the foregoing records are calculated to present.

With these questions satisfactorily disposed of, we can now lay our plans for taking an inventory. In the ordinary business this should cover the following:

1—Have all materials been properly classified as to raw material, finished parts, finished assemblies, etc?

2—Have the storekeeper and stock recording division sufficient working knowledge of these classifications to follow same throughout the inventory records?

3—Is inventory to be taken from Perpetual Inventory records or by physical count? (Thorough discussion of this phase may eliminate serious difficulty later.)

4—*If taken from Perpetual Inventory Records*:

A Have records been reconciled?

B When?

C How?

D Have periodic spot checks been made?

E Number during year?

F Last date?

G Have checks been made to determine active and inactive stocks?

H Has provision been made for listing separately abandoned parts, when still carried in stock?

I Regarding "h", has proper method of pricing been arranged?

(Continued on page 88)

* Prepared by Research Committee, composed of M. A. Wheeler, The Willys-Overland Co.; G. W. Wells, The National Supply Co., and W. A. Zolg, Toledo Scale Co., of the Toledo Chapter, N.A.C.A. N.A.C.A. Bulletin.

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E. A. Stone, Orizaba, Havana, 27 bls. rags.
Brown Bros. & Co., Transylvania, Glasgow, 49 bls. paper stock.
Guaranty Trust Co., C. Gerolimich, Palermo, 34 bls. rags.
Corn Exchange Bank, Mercier, Antwerp, 32 bls. rags.
W. Schall & Co., Mercier, Antwerp, 42 bls. bagging.
State Bank & Trust Co., Winifredian, Liverpool, 27 bls. rags.
Equitable Trust Co., Winifredian, Liverpool, 42 bls. rags.
Myers Lipman Woolstock Co., Winifredian, Liverpool, 74 bls. rags.
Whaling Waste Products Corp., Examiner, Genoa, 40 bls. cotton waste.
Bankers Trust Co., Examiner, Genoa, 26 bls. rags.
Banco Com'l Ital. Trust Co., Examiner, Leghorn, 61 bls. rags.
Interstate Trust Co., Examiner, Leghorn, 56 bls. rags.
Bank of The Manhattan Co., Examiner, Leghorn, 42 bls. rags.
Equitable Trust Co., Ontario, Havre, 89 bls. rags.
Chase National Bank, Ontario, Havre, 82 bls. rags.
Brown Bros. & Co., Ontario, Havre, 26 bls. new cuttings.
W. Schall & Co., Ontario, Havre, 463 bls. rags.
Union Bank & Trust Co., Ontario, Havre, 104 bls. strings.
National Bank of Commerce, Ontario, Havre, 324 bls. rags.
W. Schall & Co., Beemsterdyk, Rotterdam, 237 bls. bagging.
Castle & Overton, Inc., Beemsterdyk, Rotterdam, 5 bls. linen waste.
International By-Products Co., Beemsterdyk, Rotterdam, 61 bls. bagging.
Katzenstein & Keene, Inc., Beemsterdyk, Rotterdam, 213 bls. rags.
American Exchange Irving Trust Co., Welshman, Manchester, 38 bls. rags.
International Purchasing Co., Welshman, Manchester, 171 bls. bagging.

OLD ROPE

W. Steck & Co., N. Amsterdam, Rotterdam, 89 coils.
American Exchange Irving Trust Co., N. Amsterdam, Rotterdam, 91 coils.
G. W. Millar & Co., Inc., Lepanto, Hull, 154 rolls.
Castle & Overton, Inc., Lepanto, Hull, 49 rolls.
W. Schall & Co., Hinnoy, Barcelona, 61 bls.
W. Schall & Co., New York, Hamburg, 59 coils.

(Continued on page 80)

BOLTON QUALITY

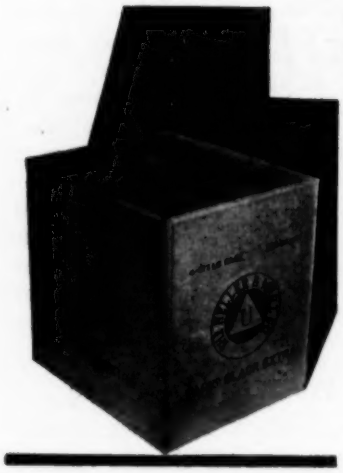
JOHN W. BOLTON & SONS, INC.

EAGLE KNIFE & BAR WORKS

Lawrence, Mass.

The only firm making KNIVES for every machine from wood pile to finishing room.

It's the KNIVES that do the work!



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PARIS BLACK EXTRA

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FIBRE CONTAINERS

Our Paris Black Extra, made expressly for the paper industry, is now available in solid Fibre Containers, holding—four—12½ lb. Paper Bags. This represents 25% freight saving and convenience in storing and handling.

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505 Hudson St., New York

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Factory—NEWARK, N. J.

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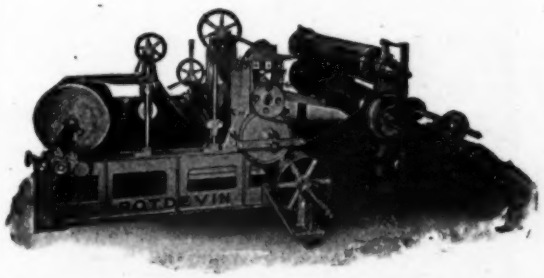
PAPER WAXING MACHINERY

Three Widths—52" - 64" - 80"

LIGHT OR HEAVY COATING

WET OR DRY WAX

ONE OR BOTH SIDES



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Union Screen Plate Company

Fitchburg, Mass., U. S. A. Lennoxville, P. Q., Canada

UNION BRONZE

SCREEN PLATES FOR FLAT SCREENS

6 SLOTS—5 SLOTS—4½ SLOTS—4 SLOTS—PER INCH

Old Plates Reclosed and Re-cut to Accurate Gauge

Rolled Phosphor Bronze and Copper Plates for Rotary Screens

Sole Manufacturers of the Union Witham Screen Plate Vat and Fastener

Imports of Paper and Paper Stock

(Continued from page 78)

Union Bank & Trust Co., Ontario, Havre, 64 coils.
W. Steck & Co., Beemsterdyk, Rotterdam, 84 coils.
American Exchange Irving Trust Co., Beemsterdyk, Rotterdam, 68 bls.

CASEIN

T. M. Duche & Sons, Sicilian Prince, Buenos Aires, 2,502 bags, 150,120 ks.
1st National Bank of Boston, Sud Pacifico, Buenos Aires, 417 bags, 25,020 ks.
Champion Coated Paper Co., Sud Pacifico, Buenos Aires, 1,272 bags, 62,765 ks.
Atterbury Bros., Inc., Sud Pacifico, Buenos Aires, 834 bags, 50,040 ks.

CHINA CLAY

National City Bank, Exeter City, Bristol, 390 bags.
J. Lee Smith & Co., Exeter City, Bristol, 50 casks.

WOOD PULP

Castle & Overton, Inc., N. Amsterdam, Rotterdam, 930 bls. wood pulp.
Chase National Bank, New York, Hamburg, 648 bls. wood pulp, 100 tons.
E. M. Sergeant & Co., Drottningholm, Gothenburg, 361 bls. wood pulp.
E. M. Sergeant & Co., Drottningholm, Gothenburg, 449 bls. dry soda pulp.
Johanson, Wales & Sparre, Inc., Drottningholm, Gothenburg, 449 bls. dry soda pulp.
Woodpulp Service Corp., Drottningholm, Gothenburg, 125 bls. sulphite.
Perkins Goodwin & Co., Drottningholm, Gothenburg, 25 bls. wood pulp.
Price & Pierce, Ltd., Drottningholm, Gothenburg, 1,125 bls. wood pulp.
Castle & Overton, Inc., Ammon, Hamburg, 2,022 bls. wood pulp, 303 tons.
Castle & Overton, Inc., Beemsterdyk, Rotterdam, 930 bls. wood pulp.
J. Andersen & Co., Sagoporack, Gothenburg, 720 bls. wood pulp, 120 tons.
Atterbury Bros., Inc., Oscar II, Oslo, 2,000 bls. wood pulp, 400 tons.
E. M. Sergeant & Co., Oscar II, Oslo, 150 bls. wood pulp, 25 tons.

WOOD PULP WADDING

Birn & Wachenheim, N. Amsterdam, Rotterdam, 50 bls.

WOOD PULP BOARDS

International Forwarding Co., New York, Hamburg, 20 bls.
C. K. MacAlpine & Co., Drottningholm, Gothenburg, 10 bls.

WOOD FLOUR

B. L. Soberski, N. Amsterdam, Rotterdam, 1,500 bags.

PHILADELPHIA IMPORTS

WEEK ENDING DECEMBER 29, 1928

Castle & Overton, Inc., Liberty, Havre, 161 bls. rags.
Dry & Co., Liberty, Havre, 211 bls. rags.
D. I. Murphy, Liberty, Havre, 844 bls. rags.
M. Freidman, Liberty, Havre, 30 bls. rags.
Katzenstein & Keene, Inc., Liberty, Havre, 152 bls. rags.
J. Jones & Co., Liberty, Havre, 2 cs. paper.
Katzenstein & Keene, Inc., Liberty, Dunkirk, 156 bls. rags.
D. I. Murphy, Liberty, Dunkirk, 216 bls. rags.
J. M. Hagy Waste Works, Liberty, Dunkirk, 165 bls. rags.
S. Birkenstein & Son, Liberty, Dunkirk, 50 bls. rags.
D. I. Murphy, Eastern Dawn, Antwerp, 237 bls. rags.
Castle & Overton, Inc., Eastern Dawn, Antwerp, 466 bls. rags.
E. Butterworth & Co., Eastern Dawn, Antwerp, 85 bls. rags.
Katzenstein & Keene, Inc., Eastern Dawn, Antwerp, 244 bls. rags.
C. B. Richard & Co., Exeter City, Bristol, 151 bls. rags.
Bank of The Manhattan Co., Exeter City, Bristol, 181 bls. waste paper.
Bank of The Manhattan Co., Exeter City, Bristol, 225 bls. rags.
J. A. Steer & Co., Exeter City, Bristol, 94 bls. waste paper.
J. Andersen & Co., Sagoporack, Gothenburg, 250 bls. sulphite, 50 tons.
Quaker City Paper Co., Sagoporack, Gothenburg, 30 rolls paper.
J. Andersen & Co., Sagoporack, Sarpsborg, 150 bls. sulphite, 25 tons.
Union Bank & Trust Co., Ontario, Dunkirk, 94 bls. rags.
Bulkley, Dunton & Co., Zenada, ——, 250 bls. wood pulp.
Bulkley, Dunton & Co., Ferm, ——, 2,000 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING DECEMBER 29, 1928

The Borregaard Co., Inc., Sagoporack, Bamble, 1,350 bls. sulphate, 225 tons.
The Borregaard Co., Inc., Sagoporack, Hurum, 2,550 bls. sulphate, 425 tons.
J. Andersen & Co., Sagoporack, Sarpsborg, 300 bls. sulphite, 50 tons.

BALTIMORE IMPORTS

WEEK ENDING DECEMBER 29, 1928

J. Andersen & Co., Sagoporack, Sarpsborg, 240 bls. sulphite.
Baltimore Trust Co., Ontario, Havre, 45 bls. rags.
National Bank of Commerce, Ontario, Havre, 105 bls. rags.
Bulkley, Dunton & Co., Para, ——, 1,975 bls. wood pulp.
Bulkley, Dunton & Co., Eros, ——, 600 bls. wood pulp.
Bulkley, Dunton & Co., Kersten Miles, ——, 4,635 bls. wood pulp.
Bulkley, Dunton & Co., Norefjord, ——, 2,650 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING DECEMBER 29, 1928

T. M. Duche & Sons, Sicilian Prince, Buenos Aires, 667 bags casein, 40,020 ks.
O. E. Kiaer, Innaren, Stockholm, 780 bls. wood pulp.
Brown Bros. & Co., Innaren, Norrsundet, 2,750 bls. sulphate.
F. Fawcett, Eastern Dawn, Antwerp, 258 bls. flax waste.
J. T. Lodge & Co., Inc., Eastern Dawn, Antwerp, 18 bls. rags.
Baring Bros. & Co., Eastern Dawn, Antwerp, 3 bls. rags.
Salomon Bros. & Co., Eastern Dawn, Antwerp, 116 bls. flax waste.
National Shawmut Bank, Eastern Dawn, Antwerp, 89 bls. rags.
Green Hamilton & Co., Eastern Dawn, Antwerp, 50 bls. cotton waste.
J. Andersen & Co., Sagoporack, Gothenburg, 750 bls. sulphite, 153 tons.
J. Andersen & Co., Sagoporack, Sarpsborg, 8,148 bls. sulphite, 1,358 tons.
The Borregaard Co., Inc., Sagoporack, Sarpsborg, 150 bls. sulphite, 25 tons.
Bulkley, Dunton & Co., Sagoporack, Bamble, 900 bls. sulphate, 150 tons.
Bulkley, Dunton & Co., Ammon, ——, 750 bls. wood pulp.
Bulkley, Dunton & Co., Fredensbro, ——, 4,300 bls. wood pulp.
Bulkley, Dunton & Co., Vela, ——, 750 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING DECEMBER 29, 1928

Waterfalls Paper Mills, Sagoporack, Gothenburg, 5,000 bls. wood pulp, 1,015 tons.
The Borregaard Co., Inc., Sagoporack, Gothenburg, 1,250 bls. wood pulp, 253 tons.
The Borregaard Co., Inc., Sagoporack, Bamble, 1,500 bls. sulphate, 250 tons.
The Borregaard Co., Inc., Sagoporack, Hurum, 600 bls. sulphate, 100 tons.
Bulkley, Dunton & Co., Para, ——, 3,000 bls. wood pulp.

Johnson Ashwood Passes On

[FROM OUR REGULAR CORRESPONDENT]

RENSSELAER, N. Y., December 22, 1928.—In the death during the past week of Johnson Ashworth, superintendent of the plant of F. C. Huyck & Sons, the company loses one of its oldest and most valuable employees. He was born in England 66 years ago but came to this country at an early age, locating in Cohoes, where he secured employment with the Harmony Mills. For a number of years he also served in the capacity of foreman with the latter firm prior to taking a more responsible position with the Huyck company. His illness was of a brief nature and news of his death was a shock to the many employees who were considerably attached to him. He is survived by a wife and one sister.

Price of Inso Board Reduced

The Stewart Inso Board Company, St. Joseph, Mo., manufacturers of Inso Board and Inso Lathe, announces a reduction of $5 a thousand feet, effective immediately.

The Stewart Inso Board Company was established in St. Joseph two years ago to make insulating lumber from wheat straw. The process was evolved by leading scientists in the Forest Products Laboratories at Madison, Wis. Since its establishment the progress has been so rapid and the sales of its products so satisfactory that this price reduction was made possible.

Swedish Pulp Well Sold Ahead

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 31, 1928.—Chemical pulp sales by the Swedish mills are reported during the early part of October to have reached about 130,000 metric tons, of which 20,000 tons were for delivery during the current year and about 110,000 tons for delivery in 1929. This brings the total sales for next year up to not less than 300,000 tons of unbleached sulphite, 60,000 tons of bleached sulphite, and nearly 200,000 tons of sulphate. In the mechanical pulp branch of the industry, the grinding mills on the Bothnian Gulf are reported to be practically sold out. What few transactions have taken place lately have been for delivery during the current year.

To Leave Oxford Miami Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, December 17, 1928.—G. C. Thornburg of this city, who has been associated with the Oxford Miami Paper Company of West Carrollton for twenty years, is leaving the company, it is reported. His plans for the future have not been announced.

Mr. Thornburg started with the old Howard Friend Paper Company in 1908 in the accounting department and when the mill was taken over by the Miami Paper Company, he became secretary and assistant treasurer of the new company.

The

ST. REGIS PAPER COMPANY

Daily Capacity
525 TONS

Newsprint
Catalog and Directory Papers
Fibre Wrapping Papers
Packers Oiled Manila
Specialties

General Sales Office
15 Broad St., New York

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Fourdrinier Wires, all widths up to 300 inches

DIMOND WIRES

NEUMEYER & DIMOND
Established 1904
82-92 Beaver St. New York

RHODES TANNATE WATERSHED BELTING

(ON SIX YEARS AND STILL GOOD)

On six years and "good for another year or two" is the report from a Wisconsin paper and pulp mill about a Rhoads Belt. Belts previously used on this "main drive of paper machine No. 1" lasted about two and a half years.

More than $10,000.00 worth of Tannate Belts have gone into the plants of this company during the past six years.

The longer life of Tannate Watershed makes it economical. Its stronger grip makes it profitable. And its dependability builds confidence with Tannate users.

Rhoads Tannate Watershed Belting is always sold under the Rhoads Service Guarantee. This leaves you to be the judge of whether your purchase is profitable. May we have your order on this basis.

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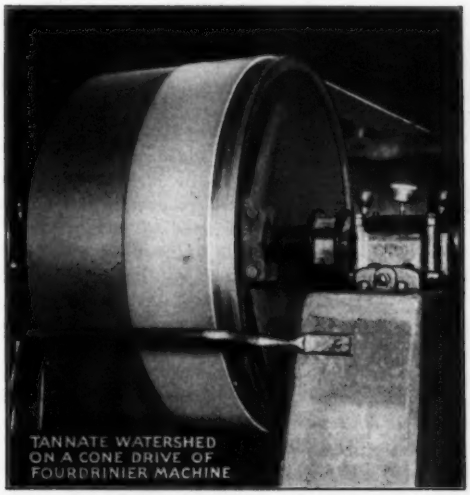
New York—104 Beekman St. Atlanta—70 Forsyth St., S. W.
Chicago—24 N. Clinton St. Cleveland—1224 W. Ninth St.

Factory and Tannery, Wilmington, Del.



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Forge and Hammer Lap Welded

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The M. W. Kellogg Co., 7 Dey St., N. Y. C.
Boston Chicago San Francisco

All Kellogg Forge and Hammer Welded Products are insurable

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 2, 1929.

Now that the Yuletide holidays are practically ended, increased activity is confidently anticipated in the local paper market. Demand for the various grades of paper has been fairly satisfactory of late. Sales forces of the leading paper houses are at present planning a strenuous Spring campaign. Prices are still holding up to former levels, in most instances.

Conditions in the news print industry are unchanged and the leading producers have not yet agreed on the contract prices for 1929 although it is hoped to make the quotation around $55 per ton. News print operations in North America are at present running at 86 per cent of capacity, according to the News Print Service Bureau. Supplies are moving into consumption in satisfactory volume for the season.

Box board is in excellent request at present and consumers are apparently taking advantage of the recent cut in quotations on chip and news board to fill their requirements. The fine paper market is exhibiting a strong undertone and tissues are going forward at a normal pace. No radical changes were recorded in the coarse paper market and wrapping paper is now moving in normal volume.

Mechanical Pulp

The ground wood market is practically unchanged. Demand for both the domestic and the imported product is fairly steady although most of the business transacted of late has been along routine lines. Prices are holding up to the levels which have been maintained for some considerable time and shading is infrequent.

Chemical Pulp

Steadiness continues to prevail in the local chemical pulp market. A fair amount of business was booked during the past two weeks for forward delivery. Shipments against contract are moving in a normal manner for the time of the year. Prices rule steady to firm and there is not much talk of concessions around.

Old Rope and Bagging

There is a persistent demand for both foreign and domestic manila rope. The undertone of the old rope market is decidedly firm at present. The bagging market remains rather quiet. Scrap bagging and gunny scrap are only in moderate request. Prices, however, remain steady and unaltered.

Rags

The domestic rag market is only moderately active at present but paper mills will probably be replenishing their stocks as soon as inventories are completed. Roofing grades and cotton cuttings continue in fair request. The position of the foreign rag market is unchanged. Prices are generally holding to former levels.

Waste Paper

Seasonal conditions prevail in the paper stock market. Most of the business transacted during the past two weeks has been for immediate requirements, but mill interest should increase when the inventory season passes. No radical changes have been reported of late and prices are mostly steady and unchanged.

Twine

Due to seasonal conditions, the trend of the twine market is much quieter than for some time past. While some slight price revisions may be made in the near future, no radical changes are anticipated. Taking into consideration the continued heavy request for wrapping paper the twine industry is inclined to be optimistic.

H. A. Vilas Joins F. L. Carlisle & Co.

ALBANY, N. Y., December 29, 1928.—Announcement is made of the appointment of Homer A. Vilas as vice president of F. L. Carlisle & Co., which controls the St. Regis Paper Co. and other manufacturing interests. He severed his connections with the Wall Street firm of Vilas & Hickey on Jan. 2 to take over his new duties. He is a graduate of St. Lawrence University and well known in Northern New York. The election of Mr. Vilas as vice president of the Carlisle concern adds the name of another Northern New York man to the list of officers of that company.

Since November 1918 Mr. Vilas has been a partner in the firm of Vilas & Hickey, bond brokers of New York City. The business has grown steadily and it is understood that his withdrawal will not interfere with its continuance. Mr. Vilas resides in Upper Montclair, N. J., and is a member of the Montclair Golf Club, Montclair Athletic Club, Stock Exchange Luncheon Club, and Alpha Tau Omega Club of New York. He has also been very active in the alumni affairs of St. Lawrence University for the past several years.

Paper City Mfg. Co. Assigns

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., December 31, 1928.—The Paper City Manufacturing Company, Inc., made an assignment recently to the Park National Bank of this city for the benefit of creditors, the papers being through the office of Attorney Frank McKay. Attorney McKay said that the firm's assets were several times its liabilities but one or two creditors had forced action by their demands when a large part of the firm's capital was tied up in stock in process of manufacture. The concern manufactures papeteries, pads and paper specialties. It was incorporated in 1918 with capital of $60,000. The Park Bank will continue operation of the plant for a time and eventually it is expected that it will be returned to the control of the original owners. The officers are: President, Edward P. Driscoll; Vice President, Charles T. Ingham; Secretary and Treasurer, Thomas J. Kinnevan. The concern occupies commodious quarters in the former Ferguson building on Hampden street, this city.

Finnish Paper Market Normal

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 19, 1928.—Finnish news print sales have proceeded normally with prices firm except in the United States, according to Vice Consul George L. Tolman, at Helsingfors. Prices of thin printings have advanced and the demand for kraft paper is noted as satisfactory with the mills having plenty of orders on hand. The demand for chemical cellulose is said to be good, all of this year's production having been disposed of and 65 per cent of the 1929 production having been placed. Prices are considered satisfactory and manufacturers recommended that an advance be effected as soon as possible. While the mechanical ground wood market has shown increased activity during the past few weeks, the price level remains unsatisfactory although in some instances favorable prices have been obtained for 1929 deliveries.

SOME PAPER MILL USERS OF *Badenhausen Boilers Superheaters :: Preheaters*

Geo. F. Hardy, Consulting Engineer, New York
For Southern Paper Co., two orders, total 4700 H.P.
For St. Croix Paper Co. ..... 1200 H.P.
For Brown Paper Mill Co. ..... 3430 H.P.
Central Paper Co., Muskegon, Mich., four orders, total ..... 3100 H.P.
Philadelphia Paper Mfg. Co., Phila., three orders total ..... 2400 H.P.
Jessup & Moore Paper Co., Phila., four orders, total ..... 4750 H.P.
Ontario Paper Co., Ltd.
For Daily Newspaper Co., North Tonawanda, N. Y. ..... 2034 H.P.
Filer Fibre Company, Filer City, Mich. ..... 1500 H.P.
John Lang Paper Co., Philadelphia, Pa. ..... 416 H.P.
Bayless Manufacturing Corp., Austin, Pa. ..... 1300 H.P.
Northern Board & Paper Co., San Francisco, Cal., two orders, total ..... 400 H.P.
Crown Williamette Paper Co., San Francisco, Cal., two orders, total ..... 750 H.P.
Delaware Hard Fibre Co., Wilmington, Del., two orders, total ..... 920 H.P.
Kieckhefer Container Co., Delair, N. J. ..... 1800 H.P.

Badenhausen Corporation

Reg. U. S. Pat. Off.
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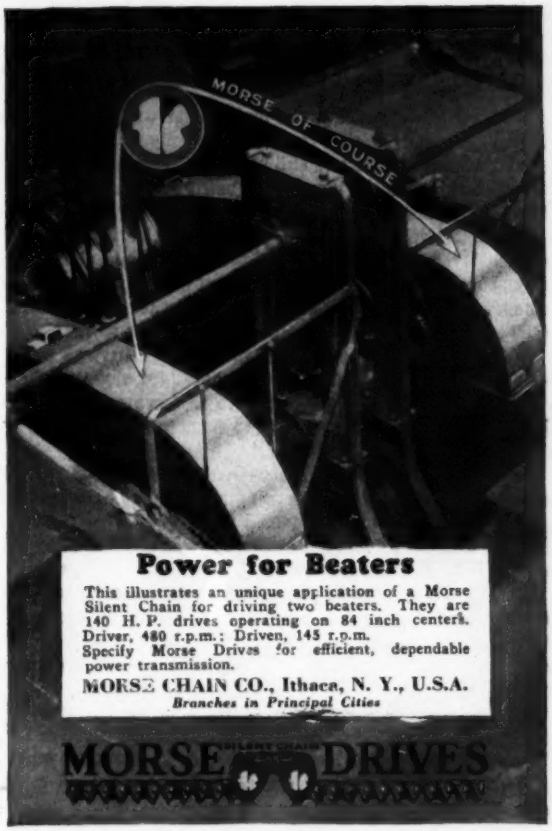
120 Broadway, New York — 211 Tramway Bldg., Denver
Reibald Bldg., Dayton, Ohio — 513 House Bldg., Pittsburgh
1019 Guardian Life Bldg., St. Paul



Power for Beaters

This illustrates an unique application of a Morse Silent Chain for driving two beaters. They are 140 H. P. drives operating on 84 inch centers. Driver, 480 r.p.m.: Driven, 145 r.p.m.
Specify Morse Drives for efficient, dependable power transmission.

MORSE CHAIN CO., Ithaca, N. Y., U.S.A.
Branches in Principal Cities

MORSE SILENT CHAIN DRIVES

THE NEW FLATHER MACHINE

of Nashua, New Hampshire, for

Waxing - Oiling - Coating
and
Saturating

is guaranteed to give you the best finish, biggest production, least trouble and most satisfaction of any equipment on the market today.

Let us prove it to you.

Gibbs-Brower Co., Inc.
Sole Agents
261 Broadway, New York City

Starch—

A SIMPLE change in the manufacturing process often results in a pronounced decrease in cost of production.

Paper Mills use Starch for sizing to produce better and stronger sheets with lower cost of manufacture.

Our SPECIAL PAPER brand for beater-sizing increases strength of sheet and gives improved finish.

Our FOX HEAD brand for top-sizing is more economical than all glue-size.

CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York City

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 2, 1929.

BLANC FIXE.—The blanc fixe market was moderately active during the past week. Prices are generally holding to formerly quoted levels. The pulp is still selling at from $42.50 to $45.00 per ton, in bulk, while the powder is quoted at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Trading in the bleaching powder market is fairly active. Supplies are moving into consumption in normal volume for the season. Prices remain steady and unchanged, in most instances. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Demand for casein was light. Offerings were more plentiful than of late and quotations declined slightly. Imported casein is selling at from 15¼ cents to 15¾ cents per pound, while domestic casein is quoted at from 15 cents to 15¾ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Conditions in the caustic soda market are satisfactory. Demand is persistent and prices are holding to schedule. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Some improvement was noticed in the china clay market. Contract shipments are moving in good volume. Prices remain steady and unchanged. Imported china clay is quoted at from $15 to $25 per ton, ship side. Domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—With the bulk of the contract business for the forthcoming year booked, the chlorine market has quietened down. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—The rosin market continues to fluctuate. At the naval stores, the grades of gum rosin used in the paper mills are now quoted at from $9.25 to $9.35 per 280 pounds, ex dock, in barrels. Wood rosin is selling at from $7.20 to $8.00 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Supplies of salt cake are moving into consumption in a satisfactory manner. Prices are holding to schedule and shading is infrequent. Salt cake is selling at from $16 to $18 per ton, while chrome salt cake is still quoted at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—The soda ash market is practically unchanged. Most of the business transacted during the past week was along routine lines. Prices continue steady. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—Demand for starch is fairly persistent. Shipments against contract are going forward at a normal pace for the season. Prices are steady and unchanged. Special paper making starch is still quoted at $4.07 per 100 pounds, in bags, and at $4.24 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market continues moderately active. The contract movement is normal and prices are holding to former levels. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.45 and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Steadiness prevails in the sulphur market. Prices are unaltered. Sulphur is quoted at $18 per ton, at mine, in lots of 1,000 tons, or over, on yearly contract, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads the quotation is $21 per ton.

TALC.—The talc market pursues the even tenor of its way. Shipments against contract are moving at a regular pace and prices are holding to schedule. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines. Imported talc is selling at from $18 to $20 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	Nominal	
Rolls, transient	Nominal	
Sheets	Nominal	
Side Runs	Nominal	
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.00	@ 4.25
Southern	3.75	@ 4.00
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	32.50	@45.00
Straw	52.50	@55.00
Chip	30.00	@42.50
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip.	45.00	@52.50
Wood Pulp	80.00	@85.00
Container	55.00	@60.00
85 Test Jute Liner.	55.00	@57.50

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.40
Easy Bleaching	2.75	@ 2.90
No. 1 strong unbleached	2.50	@ 2.80
Mitscherlich unbleached	2.55	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.50	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.50
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.15	@ 3.30
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.15	@ 2.30
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.10	@ 2.20
Checks and Blues	1.75	@ 1.90
Lindsay Garments	1.80	@ 1.85
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.50	@ 1.55
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.35	@ 3.65
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.55	@ 2.65
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.70	@ 1.80
Overissue Mag.	1.70	@ 1.80
Solid Flat Book	1.65	@ 1.75
Crumpled No. 1	1.15	@ 1.25
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
Manilas—		
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.80	@ .85
Container	.65	@ .70
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.80	@ 1.90
News—		
No. 1 White News	1.75	@ 1.80
Strictly Overissue	.85	@ .95
Strictly Folded	.70	@ .75
No. 1 Mixed Paper	.50	@ .60
Common Paper	.35	@ .40

Paprus Pie Plates *Sell faster*

because they sell more pies! Because they hold the pie in the same shape as the tin plate in which it was baked. Because they are rigid, absorbent and keep bottom crusts flaky.

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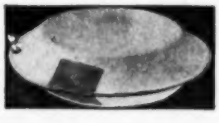

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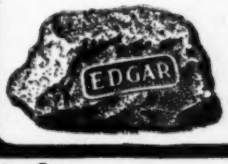

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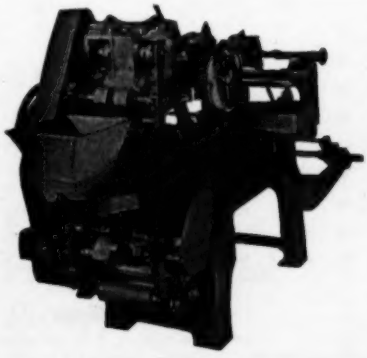

HIGHEST SPEED
Paper Bag Machinery

Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

A. L. PARRISH
1702 Robinson St., South Bend, Ind.

Twines

(F. o. b. Mill)

No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¼	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04½	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.95
White Env. Cuttings	2.90	@	3.00
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.25	@	1.35
Blanks	1.70	@	1.80
Krafts	1.90	@	2.05
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (overissue)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.10	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	.20	@	.22
Fine	.18	@	.26½
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.0b	@	.07½
Book, Coated	.10	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
News	.03¼	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.06
Manila No. 2	.04	@	.04½
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.07	@	.07½
Common Bogus	.03	@	.03½
Straw Board	52.50	@	75.00
News Board	32.00	@	40.00
Chip Board	32.00	@	38.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	53.00	@	55.00
Slaters (per roll)	84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.08½	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Washable, No. 2	.03	@	—
Fancy			
Cottons—According to grades—			
Blue Overall	.07½	@	.08
New Blue	.03	@	.03½
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.96	@	2.00
Writing Paper	1.65	@	1.70
No. 1 Books, heavy	1.50	@	1.60
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common Paper	.50	@	.55
No. 1 Mixed Paper	.65	@	.70
Straw Board, Chip	.65	@	.75
Binders Board, Chip	.65	@	.75
Overissue News	.90	@	.95
Old Newspaper	.70	@	—

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2—			
Repacked	.03½	@	.03¾
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. E.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.03¾	@	.04½
Common Bogus	.02	@	.02¾
Delivered New England points			
Straw Boards, rolls	.009		52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board		@	32.50
Chip Board			30.00
Single Manila Lined Chip			45.00
Single White, Patent Coated Newsboard			
Bender	70.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.55	@	1.60
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.20	@	1.25
White Blank News	1.70	@	1.75
Old Kraft	1.85	@	1.90
Print Manila	.80	@	.90
No. 1 Mixed Paper	—	@	.55
Overissue News	.70	@	.85
Old Newspapers	—	@	.67½
Box Board, Chip	.55	@	.60

Bagging

(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.50
Manila Rope—			
Foreign	3.50	@	3.75
Domestic	4.00	@	—
Mixed Strings	.90	@	1.00
Jute Wool Strings	—	@	1.00
Scrap Burlaps	1.50	@	1.60
Scrap Sisal	1.60	@	1.80
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	1.90	@	2.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09	@	.10
Silesias, No. 1	.06	@	.06½
New Unbleached	.09½	@	.10
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08¾

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	—	@	2.50
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.55	@	1.60
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.25	@	5.40
New Checks & Blues	4.25	@	4.50
Old Fustians	1.90	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 1 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.30	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	11½	@	—
Fancy Shirt Cuttings	05¼	@	—

Gets more heat from a pound of coal than any other combustion system
Capacities up to 700,000 pounds of steam per hour

The TAYLOR UNIT and A-E-CO FURNACE ARMOR

American Engineering Company, Philadelphia

Canadian sales and service by Affiliated Engineering Companies, Ltd., Southam Bldg., Montreal

West Virginia Pulp and Paper Company

Manufacturers of

SUPERCALENDERED and MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

also

Bleached Spruce Sulphite and Soda, Kraft Pulp

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122 East 7th St., Los Angeles, Cal.
Sixth and Chestnut Sts., Philadelphia, Pa.

BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

SUPER ALPHA

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

EASY-BEATING ALPHA

This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

REGULAR ALPHA

This is a grade midway between Super and Easy-Beating.

Use ALPHA for Quality

BROWN Company FOUNDED 1852 Portland, Maine

CRANDALL PACKING COMPANY

O. J. GARLOCK, PRES. & GEN. MGR.
Palmyra, New York
Your Nearest Service Branch

New York, 109 Liberty Street
Boston, Mass., 147 Summer Street
Birmingham, Ala., 107 South 21st St.
Chicago, 14 N. Franklin St.
Pittsburgh, Penn., 1217 Fulton Bldg.
St. Louis, Mo., 707 Market St.
Cleveland, Ohio, 1637 Superior Ave., N.E.
Kansas City, Mo., 311 Coca Cola Bldg.
Philadelphia, Pa., 1004 Race Street
Detroit, Mich., 406 Marquette Bldg.

No affiliation with any other concern selling the consumer

WOOD and TILE TANKS

of every description by your industry's foremost tank builder. Why not call in a specialist?

Kalamazoo Tank & Silo Co.
Kalamazoo Michigan

Dayton High Speed Beaters

—Advantages—
Heavier Furnishes
Faster Beating
Greater Output
More Uniform Product
Saving in Power
Saving in Labor

E. K. Mansfield & Co.
501 5th Ave., New York

The Dayton Beater & Hoist Co., Dayton, O.

Your Card in This Space Will Bring Results

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Belgo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	93	...
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s,, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	102	...
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com.	150	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	103
Whittaker Paper, 7% Cum. Pfd.	105	None Off.

INVENTORY PLANNING

(Continued from page 76)

If taken by physical count:

A Are forms in readiness in sufficient quantity?

B Has responsibility been properly vested?

C as condition of stock been noted? (Piling, etc.)

D Have written instructions been issued to each storekeeper as to how to list items?

E Have forms been distributed and explained?

F Are prices available for immediate use?

G Has work in process been reduced to a minimum as to short lots, etc.?

H Have operations on production or job cards been verified with time or piece work tickets turned in?

I Has inspection been made to last operation?

J Does quantity check with job or production card?

5—Have proper recaps been placed in inventory file to allow easy reference?

6—Has work in process plan been completed in such a way as to provide a complete check at a given time through sufficient man-power of the plant?

7—Has provision been made for receiving and recording material during the inventory period? This question links up closely with the annoying problem of "Material in Transit", and we aim to avoid errors in this connection, by proposing the following questions:

A Have a definite time and plan been arranged for closing of receipts on the receiving dock?

B Have arrangements been made to promptly finish receiving reports for all materials received up to that time?

C Have vendors been followed to insure invoices for all materials received?

D Have all invoices covering materials shipped up to and including closing date been entered?

E If invoices are not at hand for all materials received, have values been estimated?

F Have all purchased materials received been included in physical inventories?

We make no claim that the foregoing questions cover all details for the Receiving, Recording, Storing and Inventory of materials, although the questions propounded cover sufficient ground to enable the reader to supply the necessary questions pertaining to details applicable to a specific business.

Holyoke Paper Men in New Field

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., December 18, 1928.—William J. Murphy of 122 Center street for many years foreman of the finishing department of Albion and George R. Dickinson Divisions of the American Writing Paper Company, Inc., has gone to Niagara, N. Y., to supervise the installation of machinery for the International Paper Company. He will be absent several weeks.

Mr. and Mrs. Clifford Pinney of Chestnut street have left for Wilmington, Del., where Mr. Pinney is to take a position with the Jessup & Moore Paper Company of that city. For the past six years Mr. Pinney had been superintendent of the finishing department of the Crocker McElwain Company.

TRADE MARK
CAMACHINE
ROLL-WINDERS

Better Rolls—

Greater Production—

Trouble-Free Service—

A thoroughly efficient machine capable of slitting wide materials into a number of narrower widths or many narrow strips, is a valuable addition to modern factory equipment where rolls of paper or board of any kind are required in the manufacture of the articles there produced, or where material in roll form is produced for sale to others who utilize it.

May we tell you how CAMACHINES have kept pace with the needs of the paper industry, and how the right slitter and roll winder will save you money by speeding up production and cutting down waste? Just drop us a line.

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MACHINE COMPANY
61 POPLAR STREET BROOKLYN, NEW YORK

PAPER TRADE
ESTABLISHED 1872
JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SEVENTH YEAR

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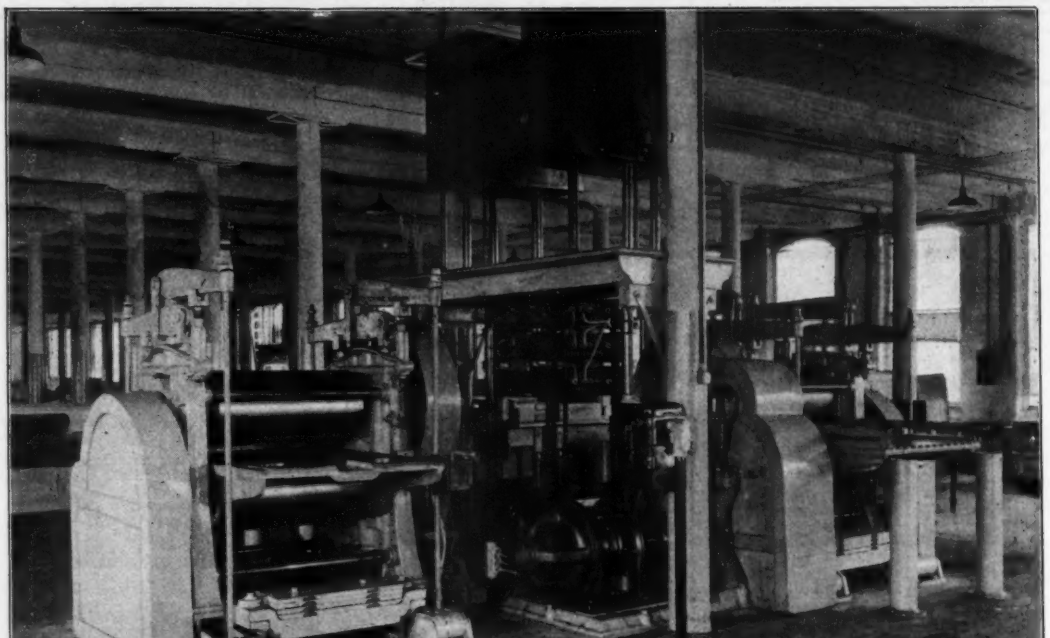
TABLE OF CONTENTS

Copyright 1929, by Lockwood Trade Journal Co., Inc.

Want Casein Put Back on Free List 21
International May Erect Mill at Nipigon 22
Mersey Paper Co. Awards Contract 22
Arrowhead Mills Sold 23
Acquires Warner & Childs Co. Inc. 23
R. T. Houk, Jr. Heads Mead Co. 23
Paper Mill Developments in Fox River Valley ... 24
New Appleton Machine Plant Nearly Ready 24
Chicago Paper Market in Satisfactory Position... 26
National Sulphite Association's Activities 26
Building Ground Wood Plant at Longview 26
Demand for Book Paper Lively in Philadelphia .. 28
Swedish Pulpwood Exports Decrease 30
Boston Paper Market Activities 30
New Machines in Balachua Mill, Russia 30
Construction News 32
Earnings of International Paper Co. 34
Boxboard Production for November 34
Obituary 36
Harding-Jones Sue to Retain Water Rights 36
Trade Marks Department 38
Darmstadt, Scott & Courtney Move 38
New York Trade Jottings 40
Editorial 42
Dr. Herty to Discuss Future of Cellulose 43
Big MacLaren Project Goes Ahead 43
Technical Section
Modern Methods and Machinery in the Sulphite Industry 45
Slime Control With Chlorine and Compounds of Chlorine 50
Current Paper Trade Literature 53
Cost Section 55
Buys Peyton Paper Co. 60
Glassine Paper Co. Insures Help 60
Imports of Paper and Paper Stock 62
Paper Mill Stocks And Bonds 66
New York Market Review 68
Miscellaneous Markets 70
Market Quotations 70

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements 75, 76, 77, 78



Plater Production Increased 20%

FINISHING room expenses can be cut by increasing your plater production to get a proper balance between the plater work and the work of the sorters. It costs money to have sorters waiting for work from the platers—and it costs money to have good plater operators leave you because your platers aren't geared up to modern production standards, and are making the operator "take it out of his hide" in a vain attempt to keep the sorters busy.

We have increased production in some mills as high as 20% by installing motor driven platers or changing present platers over to motor drives. You can increase your plater production, get snappier operation, shorten up the time of reversals, get an increase in the average speed of rolls, reduce maintenance costs by eliminating belt expense and trouble, as well as reduce the floor space required.

You can secure these advantages in two ways: First, by the installation of new Norwood motor driven platers. Second, by letting us change your present platers over into direct motor drives. We are changing many platers over into direct motor drives, and will gladly submit a proposition for changing yours over, no matter how old the platers are.

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FLORENCE, MASS.

PTJ

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Please send full details about items checked:
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☐ Changing platers to direct drive

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